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CHRONIC EPIDEMIC ENCEPHALITIS *

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The continued prevalence of epidemic encephalitis both in this country and in Europe has given rise to grave misgivings concerning the future ravages of the disease. Especially in England, where more than 5,000 cases were reported in 1924,[1] there is no little concern. The disease seems to be on the increase, and several small epidemics have been reported in this country.

Were this a simple febrile disease, even as severe as scarlet fever, its prevalence would cause little comment. Such a disease runs its course and after the attack the survivor is usually well and immune to future attacks. In the case of encephalitis, however, we are dealing with a different order of things. The initial mortality is more than 30 per cent. As if that were not bad enough, some 70 per cent [2] of those that recover from the acute attack show various disease manifestation ranging from mild conduct disorder to complete and permanent physical disability due to paralysis agitans in its gravest form. Apparently, then, only one patient out of six ever recovers completely. The acute symptoms may subside, the patient may even resume his occupation, but in the course of months in many instances there develops a slowly progressive nervous disorder that leads to complete helplessness, slow starvation, and death usually within five years of the acute attack.

Encephalitis was long ago placed on the reportable list, but even then it was not believed that the sick patients were a serious menace to their fellows. They were kept in the general medical wards and practically no precautions were taken to prevent the spread of the infection. Fortunately, this lack of precaution has resulted in no sweeping epidemic. Indeed, it has been recognized that the acute disease is only mildly contagious. The possibility of persons contracting acute encephalitis from association with those who had had the primary attack months or years previously was seldom considered. The late manifestations, parkinsonian, hyperkinetic and others, were thought of as sequelae, due to scars of preceding acute inflammation in the central nervous system, and not to continuation of the disease.

That the later manifestations of the disease are due in reality to persistence of a pathogenic agent has been recognized since 1919 by von Economo,[3] and has been insisted on by many foreign authors, notably Gabrielle Lévy,[4] Hall,[5] Stiefler [6] and Wimmer.[7] In this country however, physicians cling to the first impression that the late complications are "postencephalitic" and are only residuals of the acute disease. This point of view may lead to grave consequences, the continuance and spread of the disease, and a helpless attitude in the face of developing complications.

The evidence of persistence of the infection may be presented under four headings: clinical, pathologic, bacteriologic and epidemiologic.

CLINICAL

The disease in general begins acutely with fever, disturbance of consciousness, diplopia and a variety of motor and sensory disorders. After a course lasting from days to months, the acute symptoms subside and the patient apparently regains his health and is able to attend to his usual duties, even to return to work. There may be barely perceptible signs or none whatever of the former illness. In many cases in the latent stage there is tendency to easy fatigue, reduction of energy, and inability to think quickly and act decisively, with perhaps a slightly fixed facial expression recognizable by intimates.

There may be a recurrence of the acute form at any time. One of our patients died in her third attack. Usually, however, the chronic manifestations begin insidiously with stiffness in the neck or in one or more limbs, tremors of the fingers or jaw, difficulty and slowness in rising from the sitting posture, and progressive fixity of the facial expression, and slowly there is the development of the typical parkinsonian syndrome. Once this disease is established there is very little tendency to recede, and the remissions are usually fleeting. In this stage the condition often becomes stationary, but after a period of months or even of two or more years the rigidity increases, tremor becomes either more marked or is completely suppressed by the rigidity, saliva drips from the mouth, and the patient can no longer feed himself. Confined to bed, he lies in a fixed position for hours at a time staring into space. Unable to feed himself, to masticate his food or to swallow, he becomes progressively emaciated, and if no acute exacerbation of the disease or intercurrent infection supervenes, he dies of starvation and inanition.

This is only one of the forms that the chronic disease may take, but it is undoubtedly the most malignant. Hyperkinetic forms are frequent, respiratory arrhythmias are commonly seen in children, disorders of conduct bring other subjects into the courts and mental

* Read before the American Neurological Association, June 1, 1926.

1. London Letter, J. A. M. A. **85**: 529 (Aug. 15) 1925.
2. Stern, in discussion on encephalitis at the Deutsche Gesellschaft für innere Medicin, Vienna, April, 1923.
3. Von Economo: Ein Fall von chronischer schumweiser verlaufender Encephalitis lethargica, München. med. Wchnschr. **68**: 1311, 1919.
4. Lévy, Gabrielle: Contribution à l'etude des manifestations tardives de l'encéphalite épidémique, Paris, Vigot frères, 1922.
5. Hall: Epidemic Encephalitis, Bristol, Wright & Son, 1924.
6. Stiefler: Weitere Beobachtungen über die Kontagiosität der Encephalitis lethargica, Wien. klin. Wchnschr. **37**: 850 (Aug. 28) 1924.
7. Wimmer: Chronic Epidemic Encephalitis, London, Heinemann & Co., 1924.

hospitals. The late manifestations are treated exhaustively from a clinical standpoint in Levy's monograph.

What acute disease, its course run, will give us such strikingly progressive sequelae? When an acute infectious disease is ended, it is indeed ended. For example, in poliomyelitis, the maximal paralysis develops within a few days, and, with the termination of the fever, gradually subsides. Cerebrospinal meningitis likewise runs an acute course and then subsides. In acute rheumatic fever we may observe complete recovery from the arthritic manifestations, but if in the course of time a cardiac murmur develops, the spleen enlarges, and petechiae appear, it is not then a question of sequelae of the acute disease, but of persistence of the infection. And again in syphilis we find a general disease localizing in one or another system of the body, often in the central nervous system. We no longer doubt that dementia paralytica and tabes dorsalis are due to persistence of the spirochete in the central nervous system, no matter how many years after the primary lesion the nervous manifestations may develop. In the case of syphilis the latent period may cover many years, whereas in encephalitis it is usually a matter of months.

The natural history of epidemic encephalitis with its latent periods, its remissions and exacerbations, its slowly progressive course and termination in death many months after the acute onset, points in an unmistakable manner to persistence of the causative agent.

PATHOLOGIC

The pathologic observations in five fatal cases studied are unanimous in pointing to persistence of the disease. In the mesencephalon, where the lesions are most marked, there is found very marked destruction of ganglion cells in the locus niger, with scattering of their pigment granules, the presence of many wandering glia cells, and extensive overgrowth of a feltwork of neuroglia fibers. More important from the standpoint of the continuation of the destructive process is the presence of fat in the scavenger cells. This fat is slowly carried away to the sheaths of blood vessels by the compound granule cells and discharged into the blood stream, but the fact that it is found in abundance a period of years after the onset of parkinsonism shows that the degeneration is progressive. Even more significant is the collection of small numbers of lymphocytes within the sheaths of the blood vessels. Their significance is recognized in cases of dementia paralytica, and equally well in cases of encephalitis; they point unequivocally to persistent inflammation.

These pathologic observations are in accord with those of other investigators who have studied the disease in its chronic stage. Hohman,[8] after a study of twelve cases, states that "a striking feature is the universal finding in our cases of persistent signs of acute and subacute inflammatory reaction even after months or years of the disease." I may mention also Scholtz [9] and Meggendorfer,[10] besides the splendid contributions of Mlle. Lévy and of Wimmer. They all agree that the inflammatory process is not burned out but active.

BACTERIOLOGIC

Successful attempts to isolate a pathogenic organism from cases of encephalitis date from 1917, when von Wiesner reported finding a peculiar streptococcus that showed remarkable pathogenic effects on the nervous system.[11] A number of other investigators followed him with varying results, Rosenow [12] reporting success in eighty-one cases. No uniformity of opinion exists as yet with regard to the specificity of this organism. Many negative results have been reported, and many papers have appeared, especially in France, dealing with a filtrable virus that has not been cultivated.

The organism isolated from three of our cases seems to be identical with that described by von Wiesner and by Rosenow. Miss Evans of the Hygienic Laboratory, U. S. P. H. S., and I have published certain studies on it [13] which may here be summarized. In its most stable and virulent form the organism is a small diplostreptococcus growing in curved chains. Very minute, even filter-passing, forms are found, also large coccoid bodies. The organism grows as a facultative anaerobe after having become adapted to artificial mediums much in the manner of *Streptococcus viridans*. When inoculated intravenously into rabbits, it shows a marked tendency to localize in the brain. The animals develop convulsions, paralysis, forced movements, muscular rigidity and incoordination. Pathologic examination of animal tissues discloses acute or subacute meningo-encephalitis, with no specific inflammatory manifestations outside the nervous system. The organism may be transmitted from animal to animal. Some rabbits in our series died less than six hours after intracerebral inoculation.

Monkeys are infected by intracerebral inoculation, showing tremors, incoordination, paresis, convulsions and somnolence. At necropsy there is found acute meningo-encephalitis.

Miss Evans was unable to isolate a virulent organism from two cases at necropsy. In two cases she obtained it from the heart blood and from the midbrain. She had already obtained it from the nasal washings of these patients sometimes before death. These cases were of four and six years' duration. She had also found the same organism in the spinal fluids of two out of three living patients in the chronic stage and in the blood and spinal fluid of two acute cases although subcultures of the organism in the spinal fluid did not develop.

From the bacteriologic point of view, provided this organism is proved to be the specific causative agent of the disease, epidemic encephalitis in the stage of parkinsonism is still active, a chronic disease, as shown by the presence of virulent organisms in the brain and blood years after the first attack.

Miss Evans also found the same neurotropic streptococcus in the nasal washings and saliva of all of three patients in the stage of parkinsonism. She does not consider this important, however, as she found the same organism in the mouth washings of six out of twelve healthy persons who had not been in contact with encephalitic patients.

EPIDEMIOLOGIC

Epidemic encephalitis is mildly contagious during the acute stage. Numerous cases have been reported of direct or even of supposed indirect transmission of the disease.[14] I have compiled from the literature seven cases in which acute encephalitis developed in persons who had been in close association with patients suffering

8. Hohman, L. B.: Histopathology of Postencephalitic Parkinson's Syndrome, Bull. Johns Hopkins Hosp. **36**: 403 (June) 1925.

9. Scholtz: Zur Klinik und pathologische Anatomie der chronischer Encephalitis epidemica, Ztschr. f. d. ges. Neurol. u. Psychiat. **86**: 533, 1923.

10. Meggendorfer: Chronischer Encephalitis epidemica, Ztschr. f. d. ges. Neurol. u. Psychiat. **75**, 1922.

11. Von Wiesner, R. R.: Die Aetiologie der Encephalitis lethargica, Wien. klin. Wchnschr. **30**: 933, 1917.

12. Rosenow, E. C.: Streptococci in Relation to Etiology of Epidemic Encephalitis, J. Infect. Dis. **34**: 329 (April) 1924.

13. Evans and Freeman: Studies on the Etiology of Epidemic Encephalitis, I, The Streptococcus, Pub. Health Rep. **41**: 1095 (June 4) 1926.

14. Since carriers are evidently so abundant, as shown by Miss Evans' studies, there is naturally less importance to be attached to these isolated instances. Epidemiologic studies also tend to show that carriers are numerous and that the disease is not very contagious.

from the disease in its chronic stage or during an acute exacerbation long after the original attack.

REVIEW OF SEVEN CASES

CASE 1.[15]—A young girl having suffered from a typical acute attack of the disease in March, 1918, recovered to the extent that the only persistent symptom observed was slight rhythmic twitching of the right shoulder. In September, 1920, she became sick again with fever and diplopia, symptoms she had not presented for more than two years. Two months later her father developed acute encephalitis.

CASE 2.[16]—A patient with tuberculous spondylitis entered the ward in August, 1920. At that time there was in the ward a patient with parkinsonism who had had acute encephalitis in February, 1919. In December, 1920, the first patient developed fever, diplopia and somnolence.

CASE 3.[17]—A boy was sick with acute encephalitis from May to July, 1920, and was left with residua. His cousin, a boy, aged 9 years, came daily to see him on his way from school, and on Dec. 23, 1920, developed the disease.

CASE 4.[18]—A young woman had an attack of acute encephalitis in October, 1919, with termination in paralysis agitans. In the spring of 1922 she had a recrudescence of the acute manifestations. Her father soon became ill, having "two or three fits," and was in bed about three weeks. He recovered from the acute manifestations.

CASE 5.[19]—In July a woman became acutely ill with fever, vertigo and amblyopia. She remained in bed only two days but was subsequently troubled with lassitude. In January, 1920, she suffered a relapse with insomnia and rapidly developing muscular rigidity. In January, 1921, her husband noticed tremor of the hand, and by October had developed well marked paralysis agitans. In this case there was no acute attack in the husband, but Souques believes that nevertheless the same agent was responsible in the two cases. A number of cases of progressive paralysis agitans developing rapidly in young persons has recently been reported by Burr," so that Souques' stand is well taken.

CASE 6.[20]—A man, aged 46, contracted epidemic encephalitis in February, 1920, and was left with a well developed case of paralysis agitans. In December, 1922, there was an acute recrudescence, with death, Jan. 10, 1923. A few days later his ward, a boy, aged 18, came down with the acute disease.

CASE 7.[20]—A man, aged 22, had had poliomyelitis in early childhood with permanent paralysis, wasting and contractures. He had resided in the ward for many years. In the shifting about of patients he became placed between two patients with chronic encephalitis with parkinsonian manifestations. There was no case of acute encephalitis in the ward. In March, 1924, this young man developed a typical attack of acute encephalitis.

SUMMARY

The evidence presented under the four headings above is unequivocal in pointing to the persistence of the causative agent of epidemic encephalitis long after subsidence of the acute disease. Patients presenting so-called sequelae of encephalitis are suffering from a continuance of the infection just as much as patients with dementia paralytica are suffering from persistence of the spirochete. "Postencephalitic disorder" is therefore a misnomer. For reasons of prevention and treatment as well as for accuracy in terminology, it would be better to term the disease chronic epidemic encephalitis.

In the second place, these cases sound a challenge to investigators of the disease to find a method of satisfactorily exterminating the virus. The treatment of the disease should not be terminated by recovery from the acute attack. The intermission may offer the best opportunity of combating the disease already largely overcome by the resistive forces of the body. Treatment should be directed to eradicate the remaining organisms from the body and so to forestall the recurrence of the disease in its slowly progressive malignant forms. The latent period of seeming good health has quieted fears in too many instances, and the development of the later manifestations has aroused a hopeless attitude toward the disease, tending to console us in the notion that all the damage has already been done (as in poliomyelitis) and that further efforts are hopeless. The time to combat the disease is in the latent interval.

15. Reported by Netter: Les relations entre l'encéphalite lethargique et la maladie de Parkinson, Rev. neurol. **37**: 573, 1921.
16. Reported by Claude and de Laulerie: Deux cas d'encéphalite épidémique survenu dans le milieu hospitalier, Bull. et mém. Soc. méd. d. hôp. de Paris **45**: 36 (Jan. 21) 1921.
17. Reported by Netter in discussion on Claude and de Laulerie (footnote 16).
18. Souques: Un cas de paralysie agitante conjugale, Rev. neurol. **38**: 302, 1922.
19. Burr, C. W.: Sequelae of Epidemic Encephalitis Without Any Preceding Acute Illness (Chronic Encephalitis), Arch. Neurol. & Psychiat. **14**: 20 (July) 1925.
20. Guillain, Alajouanine and Célice: La contagion de l'encéphalite épidémique à sa phase parkinsonienne, Presse méd. **32**: 785 (Oct. 1) 1924.

CHOLECYSTOGRAPHY IN DIABETES MELLITUS *

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Gallbladder and bile duct disease has long been recognized as a cause for pancreatitis. Judd [1] says, "Cholecystitis is nearly always associated with a certain grade of hepatitis or pancreatitis, or both," and Deaver and Sweet [2] say, "The most frequent forerunner of disease of the pancreas is some affection of the gallbladder or the bile passages which is frequently but not always associated with calculi." Mayo-Robson believes that there is evidence of chronic pancreatitis in 60 per cent of patients in whom operation has shown the presence of stone in the common bile duct. This being a common observation of surgeons, the association of chcolecystitis and diabetes mellitus has been sought. From a statistical standpoint, there are those who could find no relationship between the incidence of biliary tract diseases and diabetes,[3] while others are convinced that there is such a relationship.[4]

It seemed, therefore, worth while to make use of the Graham-Cole method of cholecystography to study the gallbladders of diabetic patients. It was thought that this method might prove more reliable as regards the incidence of cholecystitis in diabetes than data based on the number of diabetic patients presenting symptoms justifying a diagnosis of cholecystitis. Necropsy records seems to have shown that a large percentage of gallstones remain silent; that is, never give clinical evidence of cholelithiasis. Riedel [5] states that in Germany only 10 per cent of gallstone carriers succumb to gallstone disease. Statistics showing a low incidence of gallstone disease in diabetic patients are not of serious significance.

* From the Medical and Surgical Services, Washington University School of Medicine and Barnes Hospital.
* Read before the Section on Practice of Medicine at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Judd, E. S.: Relation of Liver and Pancreas to Affections of Gallbladder, J. A. M. A. **77**: 197 (July 16) 1921.
2. Deaver, J. B., and Sweet, J. E.: Prepancreatic and Peripancreatic Disease, J. A. M. A. **77**: 194 (July 16) 1921.
3. Adams, S. F.: Surg. Gynec. Obst. **41**: 75 (July) 1925. Lichty, J. A., and Woods, J. O.: Am. J. M. Sc. **167**: 1 (Jan.) 1924.
4. Bigger, I. A., and Mulholland, H. B.: Virginia Med. Monthly **52**: 294 (Aug.) 1925. Rabinowitch, I. M.: Canad. M. A. J. **14**: 296 (April) 1924. Jones, C. M.; Castle, W. B.; Mulholland, H. B., and Bailey, F.: Pancreatic and Hepatic Activity in Diabetes Mellitus, Arch. Int. Med. **35**: 315 (March) 1925.
5. Riedel, quoted by Kehr, Kraus and Brusch: Spezielle Pathologie und Therapie innerer Krankheiten **5**.

During the last year, all diabetic patients under observation in the Barnes Hospital have been subjected to cholecystography. Sodium tetraiodophenolphthalein was given intravenously, following the directions given by the originators of the method.[6] In only one patient was a severe reaction encountered. One of us (S. M.) was responsible for the interpretation of the films. The criteria governing the interpretation of roentgen-ray films after intravenous injection of tetraiodophenolphthalein have been stated many times in the publications of authors of the method.[7]

TABLE 1.—*Cholecystograms in Cases of Diabetes Mellitus*

Age	Male		Female		Total
	Normal	Abnormal	Normal	Abnormal	
From 10 to 19....	2	0	1	0	3
From 20 to 29....	3	1	4	1	9
From 30 to 39....	0	1	5	2	8
From 40 to 49....	9	0	5	3	17
From 50 to 59....	4	0	3	6	13
From 60 to 69....	4	4	3	7	18
70 plus	0	1	0	1	2
Totals	22	7	21	20	70

TABLE 2.—*Data of Abnormal Cholecystograms in Seventy Patients*

Total number of cases	70
Abnormal cholecystograms	27, or 38 per cent
MALES	
Total number	29, or 41 per cent
Abnormal cholecystograms	7, or 24 per cent
Patients past the age of 40	28
Patients past the age of 40 showing abnormal cholecystograms	5, or 23 per cent
FEMALES	
Total number	41, or 59 per cent
Abnormal cholecystograms	20, or 49 per cent
Patients past the age of 40	28
Patients past the age of 40 showing abnormal cholecystograms	17, or 60 per cent

RESULTS

Tables 1 and 2 show at a glance the results of this study; 44 per cent of diabetic patients past the age of 40 showed abnormal cholecystograms. The increased incidence of abnormal cholecystograms in women as compared with men is to be expected, in the light of the well known frequency of gallstones in women. Table 1 brings out the fact that abnormal cholecystograms occur a decade or more earlier in women than in men.

The histories of these patients have been carefully gone into. Six histories were considered typical of gallbladder disease; five of these patients later showed abnormal cholecystograms. Four other patients gave questionable histories of gallbladder disease. All of these showed abnormal cholecystograms. Out of twenty-four patients showing abnormal cholecystograms, only nine, or 37.5 per cent, gave suggestive histories.

INTERPRETATION OF RESULTS

This series of diabetic patients is too small to justify any but tentative conclusions. However, some interesting questions arise which might be briefly discussed: Is the method of cholecystography a reliable index of cholecystitis? When the gallbladder is not visualized, what pathologic results are to be expected? The surgical department of Washington University has examined microscopically the pathologic material from more than a hundred cholecystectomies. These patients have all had cholecystograms which were interpreted as abnormal. In 97 per cent of the material, lesions fully justifying the removal of the gallbladders have been found. The nature of the lesions found will be published in due time. For a satisfactory cystogram to be obtained, the liver must possess the power of excreting the dye; the cystic duct must be patent and the common duct sphincter must preserve its tone. There is no reason for believing that any of these functions are lacking in diabetic patients.

Interesting as the data presented above may seem, they are of no importance as far as the causation of diabetes is concerned, unless it can be shown that the incidence of cholecystitis in the population is considerably lower than found in diabetic patients. Necropsy material ought to give the answer to this question. Unfortunately, it has not been the habit of pathologists to examine the walls of the gallbladder microscopically. One of the most important facts brought out by Graham [8] is the repeated finding of normal gallbladder mucosa associated with definite inflammatory lesions of the wall, particularly in the outer portion. Routine microscopic examination of gallbladders is sadly needed and must be done before we can have reliable data as to the true incidence of cholecystitis.

There are abundant necropsy records on the incidence of gallstones.[9]

Briefly, the facts as regards the incidence of gallstones are: In this country, Mosher,[10] examining 1,655 necropsy records at the Johns Hopkins Hospital, found that, of the patients dying in the fourth decade of life, in 8 per cent gallstones were found. In the fifth and sixth decades, the incidence was 13 per cent. Male bodies showed from 6 to 12 per cent in the fourth to sixth decades, while female bodies showed 8, 14 and 22 per cent in the third, fourth and fifth decades. Of the last 106 gallbladders examined in our own surgical-pathologic laboratory, fifty-one showed cholecystitis with stones and fifty-five cholecystitis without stones. If this ratio holds good, we might speculate on the incidence of cholecystitis thus:[11] Of men, from 12 to 24 per cent past the age of 40 have some grade of cholecystitis; of women, from 12 to 50 per cent past the third decade have cholecystitis. These figures approximate the incidence of abnormal cholecystograms in diabetic patients. Probably the incidence of cholecystitis in the diabetic patient will exceed only slightly that found in the nondiabetic. We have several hundred cholecystograms of gallbladders of nondiabetic patients, but such records do not help us for all, or nearly all, of these patients were suspected of having gallbladder disease, and hardly represent a true incidence of cholecystitis. To determine the incidence by the cholecystogram method, the test must be applied to normal persons in all decades of life. Obviously, this is difficult in a hospital population.

There are several serious objections to the assumption that the pancreatitis accompanying cholecystitis is of etiologic importance in diabetes mellitus. The nature of the pathologic changes in the pancreas accompanying gallbladder or bile duct disease is, according to Opie,[12]

6. Graham, E. A.; Cole, W. H., and Copher, C. H.: Cholecystography: Use of Sodium Tetraiodophenolphthalein, J. A. M. A. 84: 1175 (April 18) 1925.

7. Cole, W. H., and Copher, G. H.: Internat. Abstract Surg., January, 1926, pp. 1-6.

8. Graham, E. A., and Peterman, M. G.: Further Observations on Lymphatic Origin of Cholecystitis, Choledocitis and Associated Pancreatitis, Arch. Surg. 4: 23 (Jan.) 1922.

9. Kehr, Kraus and Brusch: Spezielle Pathologie und Therapie innerer Krankheiten 5. Mayo-Robson: Diseases of Gallbladder and Bile Duct, 1904. Mosher, C. D.: Bull. Johns Hopkins Hosp. 12: 253, 1901. Moynihan: Gallstones and Their Surgical Treatment, 1905.

10. Mosher (footnote 13, third reference).

11. It is fully realized that necropsy material is not a true representation of the pathologic state of a population.

12. Opie, E. L.: Diseases of the Pancreas, 1910, pp. 226-242.

chronic interlobular pancreatitis. He found that type of pancreatitis rarely associated with destruction of the islets of Langerhans, and that chronic interacinar pancreatitis, the pathologic lesion in diabetes, is not usually associated with bile duct disease. Cecil [13] found gallstones in nine of ninety diabetic patients examined. It is to be noted, however, that in these nine cases the sclerosis was of the interacinar type. If the gallbladders of Cecil's patients had been subjected to microscopic examination, doubtless a higher incidence of inflammation of the bile duct apparatus would have been found.

All observers agree that diabetes is slightly more frequent in the male than in the female.[14] But there are two cases of cholecystitis in women to every one in men. How can cholecystitis be of prime importance from an etiologic standpoint in view of these facts?

Another objection is that the pancreatitis due to bile passage disease usually involves the head of the pancreas. It is well known that there are almost twice as many islets in the tail of the pancreas as in the head. It is hardly to be expected that disease of the head of the pancreas would exert much influence on islet tissue.

In spite of these objections, there remains some evidence that bile duct disease may be of etiologic importance in diabetes.

Since 1896, when Riedel described pancreatitis associated with gall duct disease, there has appeared in the literature undoubted cases of diabetes mellitus which have been cured following surgical intervention for bile passage disease. Lichty and Woods [15] present three such cases, which they followed many years after the appearance of glycosuria and hyperglycemia. There was no recurrence of these symptoms after surgical relief of the cholecystitis. Other similar cases have been reported. It cannot be doubted that occasionally cholecystitis precipitates a mild grade of diabetes. One would have to conclude, however, that in diabetes cholecystitis is not of prime etiologic importance and cannot be placed in the same category as obesity, heredity or arteriosclerosis.

Perhaps the chief value of this work is to emphasize the probably very frequent incidence of cholecystitis in a series of patients selected without regard to gastro-intestinal symptoms.

ABSTRACT OF DISCUSSION

DR. I. I. LEMANN, New Orleans: The idea that the gallbladder disease may play a great rôle in the causation of diabetes is an old one, as Dr. Tedstrom has pointed out. But the error in judging the frequency of gallbladder disease as an etiologic factor in diabetes has been overlooked, as has also been pointed out. This is an error that has been fallen into with regard to other conditions that accompany or complicate diabetes. In studying the incidence of gallbladder disease in diabetes, we must always bear in mind the great frequency of gallbladder disease in patients who do not have diabetes. I have recently gone over my own series of diabetic cases and find that only 5 or 6 per cent of patients gave a history suggestive of gallbladder trouble. Therefore, we cannot be impressed with the frequency of gallbladder disease in diabetes.

DR. LEE RICE, San Antonio, Texas: Wilder reported fifty-eight necropsies on diabetic patients with finding gallstones and severe cholecystitis in sixteen cases, or 34.4 per cent. The youngest patient with gallstones in Wilder's series was aged 37; and the remaining fifteen were past 44. Advanced coronary sclerosis with fibrosis of the myocardium was found in seventeen cases. During the last two years, I have been investigating the occurrence of cholecystitis with and without stones in patients with pernicious anemia by the same method, and have found the incidence somewhat higher. This should be true because pernicious anemia is a disease of later life, whereas diabetes may occur at any age. Both show a strong hereditary or predisposing factor, and an acute infection, such as an attack of cholecystitis, or the jamming of a stone in the common duct, might precipitate a recognizable recurrence in either. The margin of safety in a person predisposed to diabetes is always low, and as many recover who reduce their weight and restrict their diet as do those who have the gallbladder removed, which means that a recognized pathologic condition in the gallbladder or elsewhere should be cared for, but not reported as the cause of either disease. Dr. Tedstrom asked the question: Is cholecystography a reliable index of cholecystitis? If the drug is given intravenously, the method surpasses my clinical ability. It is a definite addition to the history and physical examination, and is teaching me gallbladder diagnosis as the electrocardiograph taught me certain phases of cardiac diagnosis. Since leaving the University of Texas two years ago I have been confronted by great difficulty in getting accurate blood sugar determinations. While working in four hospitals I have been forced to rely on urinary sugar estimations to carry along my diabetic patients and I have found that I worked about as well as I did formerly. This method offers the reasonably well trained man an opportunity to follow his cases without waiting for blood sugar determinations.

13. Cecil, R. L.: J. Exper. Med. 11: 266, 1909.
14. Joslin, E. P.: Treatment of Diabetes Mellitus, 1923, p. 125.
15. Lichty and Woods (footnote 3, second reference).

SPOROTRICHOSIS, AN OCCUPATIONAL DERMATOSIS *

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In a consideration of occupational diseases of the skin, sporotrichosis, because of its relative infrequency, has received scant attention. I believe, however, that there is no disease of parasitic origin in which a larger proportion of the total cases can be considered as having originated in occupational hazards, and in which the acquisition of the disease has been so uniformly productive of occupational disability. It is therefore pertinent to discuss this disease as an occupational dermatosis. In doing this, I wish to direct attention to the observation of sporotrichosis as an endemic disease in the gardening industry, and to emphasize the importance of the barberry shrub as a possible source of the infection.

The apparent increasing prevalence of this disease should make of practical importance a consideration of its origin, mode of infection, and economic status. This is of importance especially in those states where legislation has been enacted for the protection of workmen suffering from accidents or diseases of occupational origin. In cases of this type correct diagnoses are of more than therapeutic importance because of the varied interests involved.

The basis of this paper is a group of eighteen cases of sporotrichosis observed by me during the last five years. Fourteen of these patients were employees of a tree nursery, and at least ten undoubtedly acquired the infection by inoculation with the thorns of the barberry shrub. As the acquisition of the infection in each of these fourteen cases was determined to have been in line of employment, the medical fees and wages of the patients while disabled were paid by a liability insurance

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*Because of lack of space, this article is abbreviated here by the omission of several case reports. The complete article appears in the Transactions of the section and in the author's reprints.

company. Incrimination of the barberry, or any other shrub, as a disease carrier would have permitted destruction of the entire stock of the offending shrub; and to obtain such proof, series of cultural experiments were undertaken.

The sporothrix has been previously isolated from the bark and thorns of shrubbery. In the present investigation, thorns, bark, and leaves of the various shrubs, particularly the barberry, cultivated by the nursery concerned in this report, were planted on Sabouraud's medium. The experiments were repeated at different times of the year, but all efforts to isolate the sporothrix by this procedure were fruitless.

REPORT OF CASES

Case 1.—F. R., a nursery man, aged 50, injured the left thumb and right index finger while trimming a barberry hedge in May, 1922. He extracted deeply embedded thorns from these sites on which pustular, inflammatory swellings developed simultaneously within ten days. The inflammation was of such intensity as to produce total disability for work. In several weeks, nodules appeared on the flexor surface of the left and extensor surfaces of the right forearm. On examination two months after the injury, the thumb and index finger were double their normal size because of granulomatous lesions, and both forearms showed painless, cordlike thickening of the lymphatic vessels, and associated hazelnut sized hard and soft cutaneous and subcutaneous nodules. The patient had apparently had similar attacks of what he called "barberry poisoning" the previous year and insisted on self-medication. When again seen five months later, the previously noted lesions had disappeared and he presented a vegetative granulomatous plaque on the flexor surface of the left wrist measuring 0.5 by 5 cm. and showing numerous miliary abscesses. A pure culture of *Sporotrichum schenckii* was obtained from pus in the depths of the lesion and, after a few weeks of potassium iodide medication and treatment with roentgen rays, the lesion had involuted and the patient returned to work.

Case 3.—E. K., a landscape gardener, aged 38, was injured by the thorns of a barberry shrub, Nov. 24, 1924. This shrub had been obtained from the nursery employing the other patients cited in this paper. One thorn was deeply embedded on the dorsum of the right wrist, and a few days after its removal a painless inflammatory nodule appeared at that site. When pea-sized, this lesion showed suppuration and was incised. Repeated incisions and local treatment resulted in continued inflammation and ulceration, and in a secondary acute cellulitis of the hand and wrist. Two weeks after the appearance of the initial lesion, a pea-sized subcutaneous nodule appeared at the elbow. Similar nodules, superficial and deep, appeared singly in somewhat linear formation on the median and flexor aspects of the forearm and on the wrist. When first examined, six weeks after the injury, the patient showed a violaceous granuloma, about 2 cm. in diameter, on the dorsal surface of the right wrist, with central, crater-like ulceration and a tail-like, inflammatory, cutaneous ridge extending to a soft, violaceous nodule at the ulnar margin of the wrist. There was an adjacent group of eight small, inflammatory, cutaneous nodes in spiral arrangement on the dorsum of the wrist and forearm. The ventral surface of the forearm showed a linear group of eleven subcutaneous, shot to small pea-sized, nodules extending to the elbow. The latter nodules were noninflammatory. There were no palpable lymphatic cords and no axillary adenitis or febrile reaction, but there was definite malaise. A pure culture of sporothrix was obtained in three days from the green pus of a softened nodule. There was rapid involution of all lesions from the onset of treatment with potassium iodide, and after three weeks the patient had practically recovered and was performing his usual work.

SPOROTRICHOSIS FROM THE BARBERRY

In the cases reported here, barberry thorns were removed in two from the primary lesions of sporotrichosis after suppuration had occurred; in six, deeply embedded barberry thorns were removed from a few days to two weeks preceding the development of sporotrichotic chancres at those sites. In two others, the patients had repeatedly pricked themselves with the thorns preceding development of the disease and were handling barberry shrubs daily at the time of appearance of the lesions. One man bound shrubs for shipment and was in the habit of tearing the twine with the tip of his right index finger. He developed a sporotrichotic chancre at that site. One of the other three patients injured himself with a shovel at the site of a subsequent lesion, while two could not recall injuries. The caretaker of the nursery was the only man in the organization who handled the horses, and he never developed sporotrichosis.

Cook of Texas reported a case of sporotrichosis in a nursery man, and St. Girons in France reported several cases in which he attributed the disease to infection from the barberry shrub. Wakefield of Chicago recently exhibited a gardener who informed me that he had trimmed a barberry hedge two weeks preceding the development of his disease. Zuraski has observed a number of cases among gardeners in the vicinity of Chicago. The second case of sporotrichosis on record[1] occurred in a florist. Since then a number of cases have been reported among florists. These and the preponderance of cases among farmers and in rural communities suggest that the favorite habitats of the sporothrix are probably grasses, shrubs and other vegetable matter. When infection of man has been traced to animal infection it may be assumed that the animal acquired the infection from straw or grass harboring the fungus. The barberry being a popular decorative shrub, the possibility of its being a source of sporotrichotic infection in children, as well as in adults not professionally engaged in gardening, should not be overlooked. Twenty-one cases of sporotrichosis have been reported in this country among children, chiefly between the ages of 2 and 12 years. Most of these have been children of farmers.

DISTRIBUTION

Sporotrichosis has been recognized as occurring in all parts of the world, but it has been found prevalent chiefly in rural France and in the Mississippi River basin. It has shown endemic tendencies especially in certain localities of the Dakotas, Nebraska, Wisconsin, Kansas and Missouri. Of 148 recorded American cases, 130 have occurred in the Mississippi River basin. This suggests a preference of the fungus for certain types of vegetation and certain climatic conditions.

There are nearly a hundred species of barberry, including both deciduous and evergreen varieties, and they have a distribution as world wide as that of the sporothrix. The most attractive species, and the one cultivated by most tree nurseries, is the Japanese barberry, or *Berberis thunbergii*, a small deciduous shrub having slender stalks with oval, toothed leaves, long, stiff, slender thorns, bright orange-yellow flowers and red, dark blue or black berries. The Canadian species, or *Berberis vulgaris*, has been barred from this country because in wheat growing districts it harbors *Puccinia graminis*, a fungus causing wheat rust. The occurrence of the barberry, both domesticated and wild, in all regions where sporotrichosis has been observed, and the known penchant of this shrub for harboring at least one fungus, suggest the possibility of the barberry being of more than local importance in the dissemination of this disease. Its exceedingly sharp, stiff

1. Brayton: Indianapolis M. J. 18:272, 1899.

and slender thorns inflict injury on the slightest carelessness in handling, and such injuries, usually deep, needle-like puncture wounds, are quite frequent among those handling the shrubs.

OCCUPATIONAL AND ECONOMIC STUDY

The first recorded case of sporotrichosis [2] occurred in a laborer following an injury at work, and resulted in three months of total disability for work before its nature was recognized, and in more than a month of continued disability before recovery. Since that time the majority of recorded cases in this country have occurred among adults engaged in manual labor, and the majority of the infections have occurred on the fingers or hands, being thus productive of occupational disability. This disability has usually been of at least several months' duration and therefore of material importance, resulting in loss of wages and often in loss of employment for the wage earner, and in loss of time and disorganization of work for the farmer. In the case of women patients, most of whom were farmers' wives, it undoubtedly resulted in some disorganization of the household. The economic loss measured in the money value of time lost from work in addition to wages lost or compensation paid, while not large in the aggregate, would show a considerable per capita sum.

While it is recognized that numerous cases of sporotrichosis have not been placed on record, this fact should not detract materially from the value of the following statistics. These were compiled from the records of the 148 cases that have been reported to date in the United States.

Among 145 there were ninety-eight males and forty-seven females, and of these ninety-two were between the ages of 18 and 50 years. Among eighty-four adult males there were sixty-nine manual laborers, of whom twenty-nine were farmers or farm hands, seventeen nursery men or gardeners, eleven industrial workers, ten unclassified laborers, and two stable boys. Among the remaining fifteen, there were three clerks, two each of florists, merchants, doctors and sailors, and one soldier. Among thirty adult females, sixteen were recorded as housewives, and ten as living on farms. The others were a florist, a gardener, a berry picker and a teacher.

A survey of the sites of the primary lesion among these patients showed the infection to have occurred on the distal portion of the upper extremity in 111 out of 146 cases. The index finger, usually the tip, was the site of infection twenty times, the thumb twelve, the other fingers ten times, the nails once, the dorsum of the hand thirty, the palm three, the wrist fourteen, the forearm fourteen, the elbow four times, and the shoulder twice. The foot, leg and knee were primarily infected sixteen times. In only nineteen cases was the initial lesion located elsewhere than on the extremities, nine of these being eyelid infections.

Excluding one case said to have been of six years' duration, the average duration of the disease before recognition among fifty-one cases was four months, with the predominating period between two and three months. The average period of treatment in twenty-seven cases before sufficient recovery had occurred for return to work was twenty-six days. This indicates an approximate average period of five months' disability from the time of acquisition of the disease until the time of recovery.

2. Schenck: Bull. Johns Hopkins Hosp. 93: 286, 1898.

Trauma, definitely related to and preceding infection, was recorded in sixty-three cases and an absence of trauma was recorded in only a few, from which it may be assumed that trauma usually precedes inoculation with the sporothrix. In these cases of traumatism puncture wounds, chiefly with thorns, were recorded twenty-three times, and scratches, cuts and bruises, thirty-one times. Contact with infected animals was cited as a possible cause in eight cases, though in some of these the connection was extremely remote. Two patients acquired the disease through infected dressings from sporotrichotic patients, and two physicians were accidentally infected while working with laboratory cultures of the sporothrix, one of which had been obtained from an infected horse.

ETIOLOGY AND PATHOGENESIS

The sporothrix is considered a fungus of low virulence requiring for the development of sporotrichosis a condition of lessened resistance in the host at the time of inoculation. A loss in continuity of the skin, usually at a site of injury, serves as a portal of entry for the infection, which, after the development of a primary lesion, may be disseminated by way of the lymphatics or the blood stream. Infection may occur through a hair follicle or through the unbroken mucous membrane, and the experimental proof of the permeability of the intact intestinal mucosa to the sporothrix indicates the possibility of acquiring the infection from food. Of interest in this connection is an unusual case recently reported by Boggs and Fried.[3] The patient had an acute sporotrichotic dysentery and sporotrichotic onychia. The sporothrix was cultivated from nail scrapings and from the stools, and the patient, whose hobby was gardening, had a habit of frequently biting her nails.

SYMPTOMATOLOGY

Sporotrichosis is an infectious granulomatous disease involving chiefly the cutaneous and subcutaneous tissues, but invading at times any or all structures of the body and exhibiting great clinical polymorphism. The disease may be localized or systemic, and in the same case at one time there may be cutaneous, subcutaneous, osseous and visceral lesions in different stages of evolution and involution. There are more than six clinical varieties, of which the most important are the localized lymphangitic and the multiple gummatous types. While this disease is usually characterized by the extreme indolence of its development and course, and by an absence of fever and systemic symptoms, it may at times be abrupt in onset with fever and the general symptoms of an acute septicemia, and a rapidity of development of lesions in the manner of a hematogenous eruption.

In eighty-nine of the cases reviewed in this paper in which the clinical types of disease could be fairly well determined by the case records, sixty-three were of the localized lymphangitic and fifteen of the multiple disseminated types. In this country there have been only three fatalities recorded and few cases of permanent disability. In contrast to this, the French literature is replete with records of arm, leg and thigh amputations, pulmonary infections, serious visceral disorders, and bizarre clinical types of sporotrichosis. It is possible that we in the United States fail to recognize the more atypical forms of this disease. It is also

3. Boggs, T. R., and Fried, H.: Bull. Johns Hopkins Hosp. 37: 164 (Sept.) 1925.

possible that the prevailing varieties of the sporothrix fungus in the two countries differ in pathogenicity as well as in morphology.

Localized lymphangitic sporotrichosis is characterized by the appearance of a chancre at the site of inoculation, followed, in a variable period of a few days to several weeks, by multiple subcutaneous gummas and an ascending lymphangitis along the course of lymphatic drainage from the primary lesion. The latter usually develops on an exposed part and is a verrucous or vegetative granuloma, a gumma, an abscess, a furuncular pustule or a simple ulcer. This lesion is usually an indolent inflammatory process, causing little or no pain, and running a protracted course; and it may rarely be the only visible lesion. The lymphangitis, which is usually present, results in a palpable, painless, cordlike thickening of the chief lymphatic vessel or vessels draining the site of the infection. The gummas are pea-sized, hard, elastic, usually painless subcutaneous and cutaneous nodules varying in number from three or four to twenty or thirty or even more, and showing a systematic grouping along the lines of lymphatic drainage. Some of these lesions remain nodular while others undergo softening with the formation of cold abscesses, and sometimes ulcers, in the course of three to six weeks. The abscesses adhere to the overlying skin, which is sometimes congested or moderately inflamed, and usually develop without inflammation, pain or systemic symptoms, remaining quiescent while new lesions appear and go through a similar course of evolution. The softening in the nodule occurs superficially and centrally, yielding a cup-shaped depression with marginal induration, and usually not ulcerating unless incised, in which latter case a thin viscid pus is evacuated which later becomes thick and purulent, and following which, the incision closes with a reformation of the abscess, or a chronic ulcer develops.

Multiple ulcerating gummatous sporotrichosis, though uncommon, is probably the most frequent of the two types of disseminated sporotrichosis seen in this country. The ulcers are of three clinical types, the tuberculoid, syphiloid and ecthymatiform. The tuberculoid type are usually fistulous in character, with narrow irregular openings, loose violaceous borders, scanty sanguinolent pus, and dirty granular bases that bleed readily and are usually crust covered. The syphiloid type are large crateriform ulcers with sharply defined margins and infiltrated borders, and the ecthymatiform ulcers are usually superficial, heavily crusted lesions with a moderate inflammatory infiltrate. The development of the ulcerative stage may be rapid, occurring in less than three weeks, or it may require several months. Involution is usually very slow in untreated cases, ulcerations persisting for months or even years.

Multiple disseminated subcutaneous gummatous sporotrichosis is the variety of this disease most commonly observed in France, and it is characterized by the insidious development of small, hard, elastic and painless subcutaneous nodules varying in number from a few to more than a hundred, showing no selective localization or systematic grouping, attaining sometimes the size of walnuts, and rapidly undergoing softening with the formation of cold abscesses in the course of from three to six weeks. These lesions rarely ulcerate, and the ulcers, when present, are usually of the syphiloid type.

The clinical and diagnostic features of the less common types of sporotrichosis, the morphology of the organism, and histologic and serologic studies have been discussed in a previous paper.[4]

DIAGNOSIS

Most importance attaches itself to the differentiation of syphilis, tuberculosis and indolent pyogenic infections from sporotrichosis, though consideration should be given to blastomycosis, actinomycosis, glanders, tularemia, and the rarer mycoses such as nocardiosis. Sporotrichosis should be considered in all cases of chronic suppurative or granulomatous disease, especially when such cases are characterized by multiple cutaneous or subcutaneous gummatous lesions, often associated with a primary traumatic lesion and a distribution suggestive of lymphatic dissemination. Multiple suppurating lesions in bones, joints, muscles or synoviae, particularly when such lesions follow the course of the lymphatics from a peripheral ulcerating lesion, should arouse a suspicion of sporotrichosis. A clinical diagnosis should, when possible, be confirmed by a cultural diagnosis, and when this method fails, recourse may be had to the complement fixation test or the agglutination test of Widal and Abrami, the intracutaneous reaction of Bloch, and animal inoculation, preferably of the rat. The sporothrix is difficult to find in smear preparations, and the diagnostic value of finding it varies directly with the mycologic and bacteriologic experience of the investigator. On the other hand, the fungus is usually easily grown on ordinary culture mediums, preferably a sugar medium, at room temperature, and the colonies obtained should be readily recognized.

TREATMENT

Potassium iodide in rapidly increasing dosage of from 30 to 90 grains (2 to 3 Gm.) daily usually results in prompt involution of the lesions. It should be continued for a month after apparent recovery, to avoid recurrences. Locally, compound solution of iodine may be applied to ulcerations, and roentgen ray employed to promote resolution of infiltrates. When potassium iodide is not tolerated by mouth, compound solution of iodine may be used intravenously. Shelmire recommends the sodium instead of the potassium salt, and administers from one-third to 12 cc. per dose. Surgical treatment is generally contraindicated because of increased suppuration and prolonged ulceration, though T. F. Riggs of Pierre, S. D., who has had a wide experience with sporotrichosis among farmers and cattlemen, advocates curettage followed by dull heat electrocautery, believing that it shortens the period of disability. Potassium iodide is also administered.

Potassium iodide, having no prophylactic value in sporotrichosis, and one attack of the disease failing to produce immmunity, a search for a plant carrier of the infection and its destruction, where numerous cases occur, should be considered as part of a therapeutic procedure.

CONCLUSION

If the case reports reviewed for this paper may be taken as a criterion, it is evident that most cases of sporotrichosis occur among manual workers during the ages of greatest physical and productive activity; that in most instances the lesions are so situated as to produce physical disability, and that such disability is usually of occupational origin and of several months' duration. The occurrence of sporotrichosis as an occupational hazard among those engaged in farming and

4. Foerster, H. R.: Am. J. M. Sc. 167:54 (Jan.) 1924.

horticulture, and the apparent importance of the barberry shrub as a source of infection, contribute to the economic importance of this disease and help to establish its place among occupational dermatoses.

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ABSTRACT OF DISCUSSION

DR. ALDO CASTELLANI, New Orleans: The first sporotrichum connected in any way with man was found more than a hundred years ago: *S. inquinatum* Link, 1809. The second sporotrichum found connected with man (*S. bronchiale* Montagne) was discovered in 1844, in the bronchial secretion of a man supposed to be suffering from tuberculosis, but the real history of sporotrichosis begins with the names of Schenck, Hektoen and Perkins. Their work will remain classic. As to the classification of yeastlike fungi, for several years Chalmers and I have attempted a botanic classification, but for clinicians I have found the following scheme useful. We must give importance to two factors, the presence or absence of ascospores and the presence or absence of mycelium. In the ascospores present group are: mycelium absent, *Saccharomyces sensu-lato;* mycelium present, *Endomyces.* In the ascospores absent group are: mycelium absent, *Cryptococcus sensu-lato* and mycelium present, *Monilia sensu-lato.*

DR. E. D. CRUTCHFIELD, Galveston, Texas: My experience with sporotrichosis is limited to five cases. Until I read Dr. Foerster's paper, I had the impression that the disease was produced by inoculation of the organism by any traumatic means. It is interesting to know that the barberry shrub, particularly the thorn, is very important, and so far as I know the only proved way in which the disease may be inoculated. Galveston is on an island which has been raised about 10 feet by pumping in sand. The entire surface of the island is covered with soil of some kind, and the soil is covered with fertilizer, usually animal excreta. It had occurred to me that perhaps the sporothrix had its origin in the fertilizer. In one instance, the case of a longshoreman, there was no possibility of his having come in contact with bushes of any kind. On the other hand, he had contact with household pets, one of which had mange, and we thought that might have been the place of origin. Again, since the organism is found in the nasal secretion of both men and animals, and in the alimentary tract, it might be possible that the origin of the sporothrix was in the fertilizer. It would be interesting if Dr. Foerster could tell us whether this was possible.

DR. HARRY R. FOERSTER, Milwaukee: I should consider fertilizer a possible source of *Sporothrix.* I believe there may be many sources, and I was attempting to point out just one which, in the group I observed, was of considerable significance. In this group I do not think that accidental contamination of shrubbery by fertilizer was a factor because most of the shrubs handled were in the warehouse, dry, prepared for planting or for shipment.

"What's Best to Eat."—For all practical purposes we need only remember that it is essentially the food substances which provide for the growth of the offspring and in which the vital processes which maintain life are most active which contain these vital elements in greatest abundance and in their most active condition. Such foods are milk, eggs, the germs of seeds, the juices of fruits and green leaves, and the vital organs of animal bodies. Contrast with these the food substances which are devitalized or which take very little part in the vital processes of the living organism. Such are white flour, white rice and other cereals, flesh meats, tinned vegetables, tinned fruits, meat extracts, tea, coffee, jam, custard powders and vegetable oils. . . . It will be obvious, then, that the average diet of a large proportion of the population of civilized countries is badly short of these vital substances, especially of vitamin B, and we shall not be surprised to learn that this deficiency lies at the root of much ill health and disease.—S. Henning Belfrage.

THE INTERRELATION OF LESIONS OF BONE MARROW, LIVER AND SPLEEN *

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Picturesquely speaking, the blood may be regarded as an organ in which, in a liquid medium called the plasma, various cellular elements, all necessary to life, are brought into intimate contact with every part of the living body. All vertebrates have red blood, with the exception of the amphioxus, which has white blood. This cordate animal is possibly the connecting link between the invertebrates and the vertebrates. All invertebrates that have a circulating medium have white blood, although a few have blood cells showing a trace of hemoglobin. The first blood in the human embryo is white, and there is evidence of a primitive mechanism for circulating white blood that has become a part of the vascular system.

Fairly accurate knowledge of the structure of the cellular elements of the blood has been gained through the microscope, but the constituents of the plasma lie in the colloid and molecular fields beyond microscopic observation. Fortunately, great additions have been made to scientific data through newer work in physicochemistry, by which this ultramicroscopic field has been presented so as better to elucidate its many problems. The unaided eye of man is relatively slow in perception, having neither the acuteness nor the length of vision of the eyes of many lower orders of life. That the hand is quicker than the eye has been demonstrated beyond peradventure. It is not the eye mechanism but the eye brain of man that is triumphant. Pathways exist from the eye to the thinking and analytic parts of the brain, and memory is largely the result of visual impressions. Even in the fields that lie beyond the microscope, the standards of measurement are eventually visual. In photography, however, a method has been perfected of fixing movements of particulate bodies which are too small or in too rapid motion for the eye to take cognizance of them. It is possible to take a shadowgraph of a bullet traveling 3,000 feet a second in so short a time (about one twelve-millionth second) that the picture is as sharp as though the bullet were motionless.

The red blood cells are the oxygen carriers of the body and are formed in the bone marrow; the blood platelets are formed in the megakaryocytes of the bone marrow and have to do with the clotting of the blood; the white blood cells are formed in the reticuloendothelial tissues and have functions of repair and defense; to a large extent the blood plasma originates in the liver.

Sabin,[1] in her work with the so-called clasmatocytes, has shown that all the blood cells are mesoblastic in origin. The blood cells originate in the buddings of a vascular network of the blood vessels, and, since they are formed in direct connection with the blood vessels, they pass, when developed, into the blood stream.

The red blood cells in the embryonic stage contain dimly seen nuclei which normally disappear as the oxygen-carrying function of the cells is established. This is due to the hemoglobin of the red blood cell, to

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* Read before the Section on Surgery, General and Abdominal, at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Sabin, Florence R.: Origin of Cells of Blood, Physiol. Rev. 2:1-38-69 (Jan.) 1922.

each molecule of which iron contributes one atom. In normal blood the hemoglobin carries from 18.5 to 20 per cent of oxygen by volume, in loose combination

In pernicious anemia, a disease which has been called cancer of the red blood cells, the number of red blood cells is reduced, but the remaining cells are larger than normal, irregular in size and outline, and nuclear division may sometimes be seen; this is evidently a malignant tendency to revert to embryonic conditions. In pernicious anemia the patient is unable to produce normal red blood cells, and yet these subnormal blood cells are capable of sustaining life and are the best the patient can produce. There is excessive destruction of the red blood cells, a high color index and an increase of the bile pigments, which, in the acute phases in this respect may cause a condition resembling hematogenous icterus. Peabody and Broun[2] have shown that the excessive destruction of the red blood cells in pernicious anemia is most marked in the bone capillaries. In the terminal stages of pernicious anemia, both the blood platelets and the white blood cells are changed in form and reduced in number.

In polycythemia, embryonic nucleated red blood cells are often seen, with an enormous increase in red cells, perhaps to 12,000,000 or 14,000,000, and a great development of the hemoglobin, which may rise to 130 per cent. The consequent increase in the viscosity of the blood adds to the work of the heart, and often results in cardiac hypertrophy and eventually myocardial failure, of the type seen in cases of grave hypertension. Phenolhydrazine is a potent agent in destroying red blood cells and is now used with great success in the treatment of this disease.

In hemolytic icterus the production of the red blood cells is increased, probably a work hypertrophy to attempt to compensate for the unnecessary destruction of red cells in the spleen; the result is secondary anemia.

In hemorrhagic purpura there is destruction of the blood platelets in the spleen, with prolongation of the bleeding time. The blood clots, but the clot does not contract normally. In health the blood platelets range from 225,000 to 400,000 for each cubic millimeter; in hemorrhagic purpura they are greatly reduced, and when they are below 50,000 the disease is manifest.

In the embryo, the reticulo-endothelial and lymphoid organs, as well as the bone marrow, take part in the formation of the blood. The liver and the spleen, until the fifth month, are sources of the cellular elements of the blood. The spleen continues to produce white cells throughout life. While it is established that the worn-out cellular elements of the blood are destroyed in the spleen and other endothelial tissues, there is evidence that under ordinary conditions of health many red blood cells are stored temporarily in the spleen; that this organ can, by the contraction of its nonstriated muscle fibers, evacuate these cells following digestion, undoubtedly to a greater extent in time of need; and that possibly in time of stress the spleen may produce red blood cells. Nearly 20 per cent of the blood volume in the dog may be temporarily stored in the spleen.

While all the white blood cells have defensive function, the phagocytic action is especially marked in the mononuclear endothelial leukocytes. The lymphocyte is one of the most important of the white blood cells, because it is the agent of repair and healing. It contains all the elements necessary to life, as shown by Carrel,[3] who has been able to keep fibroblasts alive and growing for more than twelve years by supplying lymphocytes and removing the excreted products.

The liver is the great metabolic organ of the human body, and is essential for both carbohydrate and protein metabolism, as evidenced by Mann's work[4] proving that without the liver the normal blood sugar level cannot be maintained, and urea is not formed. Although the liver stores fat, and undoubtedly aids in its utilization, the investigations of Roger and Binet[5] would indicate that a large amount of oxygen is required for the combustion of fat. They proved that a considerable quantity of fat for immediate purposes is metabolized in the lungs. The work of the liver is done on venous blood which has a decreased oxygen content, and consequent slight power to metabolize fat. The blood plasma is formed largely in the liver.

The development of ultramicroscopic methods by which the problem can be approached from the physical aspect has opened new and enormously fruitful physiologic fields, which concern life itself. The body might be described as a colloid mechanism in which the electric exchange in the atom, which modifies the molecular constituents of this colloid combination, is the important biochemical event in the physiology of the living.

One-tenth micron, or $\frac{1}{250000}$ inch, may be accepted as the present-day limit of microscopic visibility and the beginning of the colloidal division of matter. The crystalloids are of molecular dimensions, or about 0.001 micron (approximately $\frac{1}{25000000}$ inch) in diameter, and are at present just beyond the limits of visibility by any microscopic methods. In the colloidal field, chemical changes take place in the molecules. Knowledge of the colloids has been gained largely through the fact that the dimensions of the colloid molecules are greater than those of a ray of light, and refract and reflect the rays of light. One gains no idea, however, of their size, shape, color or other significant details.

The shortest ray of electromagnetic vibration is the gamma ray from radium, $\frac{1}{1000000000}$ inch in length. The next is the roentgen ray, which is about $\frac{1}{100000000}$ inch in length. In elaboration of the theory that an atom is composed of a central nucleus consisting of a positive electric charge called the proton surrounded by negative electric charges called electrons, Moseley[6] analyzed the atom by refraction of the roentgen ray, which is smaller than the atom itself, and showed that there are ninety-two possible elements between hydrogen, the lightest, the atom of which is made up of one electron revolving about one proton, and uranium, the heaviest, all but four of which are now known, and that between each two elements in the progression of atomic weight there was approximately the weight of one or more atoms of hydrogen.

Color produced *en masse* by dyes has afforded one of the most important methods of recognition of the minute in the ultramicroscopic field. Colors are simply relative rates of electromagnetic vibrations or speeds in the lines of the spectrum, as recognized by the eye. Rays of light, traveling 186,000 miles a second, on striking objects are broken up into spectral lines by reduction in speed and corresponding change in wave length. There are visible to the eye of man those elec-

2. Peabody, F. W., and Broun, G. O.: Phagocytosis of Erythrocytes in the Bone Marrow, with Special Reference to Pernicious Anemia, Am. J. Path. **1**: 169 (March) 1925.

3. Carrel, Alexis: Cultures pures de fibroblastes provenant de sarcomes fusocellulaires, Comt. rend. Soc. de biol. **90**: 1380-1382 (May 30) 1924.

4. Mann, F. P.: Modified Physiologic Processes Following Total Removal of the Liver, J. A. M. A. **85**: 1472-1475 (Nov. 7) 1925.

5. Roger, G. H., and Binet, L.: Physiology of the Lung, Rev. d. méd. **42**: 1-80, 1925.

6. Moseley: Moseley's Laws, in Kaye, G. W. C.: X-Rays. London, Longmans, Green & Co., 1923, pp. 242-245.

tromagnetic vibrations (or rays of light) ranging in length between 770 millimicrons and 390 millimicrons, the slowest and longest of which is red, and the others, in order of speed and length of vibration, orange, yellow, green, blue and violet. Perkin,[7] in 1856, working in an English university, discovered the dyes, in which he was unable to interest his countrymen. Hofmann, in whose laboratory Perkin did the work, took the new knowledge with him to Germany, where it was developed and became one of the causes of the Great War, since it gave the Germans not only early knowledge of dye chemistry, but also clues to the various gases and explosives which are in the same chemical group as these substances. Evans has shown that the rate of elimination of all dyes from the blood stream, when introduced intravenously, is in direct proportion to the size of the molecule of the dye. The application of this knowledge to medicine has given much information as to the functions of the kidneys, the liver and other organs.

Abel and Rowntree,[8] in 1909, and Rowntree and Geraghty,[9] in 1910, experimenting with the elimination of aniline dyes from the kidney, discovered the dye phenolsulphonphthalein. They found that this dye was eliminated through the kidneys without chemical change and without affecting the tissues of the body, at once demonstrating the filtering function of the kidneys and proving that the molecule of the dye is approximately the size of the molecule of urea, which is one of the smallest of the organic molecules. From these deductions Rowntree and Geraghty perfected the phenolsulphonphthalein test, which has been of enormous value in estimating the functional activity of the kidneys. Rowntree, Hurwitz and Bloomfield [10] later found that the specific excretion of the dye phenoltetrachlorphthalein, through the bile, made possible a dye test of hepatic function. Rosenthal,[11] by ascertaining the length of time required to eliminate phenoltetrachlorphthalein, has been able to give permanent value to this discovery by developing a method which gives perhaps the best test for hepatic function that we have, so far as the elimination of bile pigments is concerned. Sheard, Baldes, Mann and Bollman [12] have shown by spectrophotometric methods that the pigments which result from the destruction of the red blood cells are produced in all the reticulo-endothelial tissues of the body as well as in the liver.

Graham and Cole [13] worked along these lines, first with the derivatives of phenolphthalein, which in the gallbladder produced a faint shadow with the roentgen ray, later with the corresponding iodine, and finally with the bromine substitution product of phenoltetrachlorphthalein. Their experiments led the way to the discovery of a graphic method of showing the physical condition of the gallbladder by the shadowgraph, a diagnostic aid of tremendous importance.

One of the most important functions of the liver is the detoxication of chemical substances and the destruction of bacteria and protozoa. The liver is peculiar in that all its cells are alike, and therefore its morphologic structure when diseased is relatively simple, as contrasted with that of organs with cells of diversified function. In very acute toxic conditions, bacterial or chemical in origin, the liver may undergo acute fatty degeneration, even in forty-eight hours, so that on gross section it will exude oily drops. In the more chronic diseases, forms of cirrhosis develop. Diffusely encapsulated noxious substances, which reach the liver through the portal circulation, underlie the portal cirrhosis that interferes with the circulation, and is accompanied by hemorrhage from the stomach, and ascites; while the infectious and toxic agents that affect the bile channels (usually the result of stones and infection in the common duct and gallbladder) cause biliary cirrhosis with jaundice and enlargement of the liver.

The spleen is a hemolymph gland, and as such belongs to the reticulo-endothelial system. Because it is only one of a large group of similar tissues, its removal causes little or no change in the functions of the body. While physiologically the spleen is not very important, pathologically it is extremely important. The spleen not only produces the specific splenic pulp cell, which is a very efficient phagocyte, but it also normally removes from the blood worn-out red blood cells and blood platelets. Any increase in the size of the spleen heightens this particular activity, so that the spleen becomes a destroyer of relatively sound red cells, causing secondary anemia, of which splenic anemia is a type.

The spleen also acts as a coarse filter to remove micro-organisms from the blood stream. Those which it cannot destroy it sends ordinarily to the liver for destruction. Often the spleen becomes a habitat for bacteria and protozoa which it is unable to destroy completely or send to the liver, and consequently gives rise to the reinfections so often seen in the splenomegalia of syphilis, malaria and tuberculosis, manifested by chronic anemia and perhaps failure to respond to remedial agents. The more one studies the pathology of the spleen, the more one is convinced that the conditions with which it is associated are not diseases caused by the spleen, but are syndromes in which the spleen is more often the destructive than the etiologic agent.

In a considerable number of these syndromes, removal of the spleen greatly benefits or cures the patient, who otherwise would progressively grow worse and die. Splenectomy in cases of splenic anemia gives a very high percentage of cures, and because of the extraordinary ability of the liver to develop compensatory hypertrophy, even patients in the Banti stage with advanced portal cirrhosis have recovered and remained well for years after the spleen has been removed. In the chronic splenomegaly of certain types of uncured syphilis, the removal of the spleen reduces the anemia, and many of the patients previously unrelieved by antisyphilitic measures recover rapidly and remain well. In cases of hemolytic icterus and chronic hemorrhagic purpura, splenectomy is a life-saving measure.

Since the spleen, as one of its functions, produces white blood cells, we would expect that it would be associated with some of those malignant diseases of the white blood cells of which the terminal condition called splenomyelogenous leukemia is a good example. In the

7. Perkin, W. H.: Encyclopedia Britannica **21**: 173, 1911.

8. Abel, J. J., and Rowntree, L. G.: On the Pharmacological Action of Some Phthaleins and Their Derivatives, with Special Reference to Their Behavior as Purgatives, I, J. Pharmacol. & Exper. Therap. **1**: 231-264, 1909.

9. Rowntree, L. G., and Geraghty, J. T.: An Experimental and Clinical Study of the Functional Activity of the Kidneys by Means of Phenolsulphonphthalein, J. Pharmacol. & Exper. Therap. **1**: 579-661, 1910.

10. Rowntree, L. G.; Hurwitz, S. H., and Bloomfield, A. L.: An Experimental and Clinical Study of the Value of Phenoltetrachlorphthalein as a Test for Hepatic Function, Bull. Johns Hopkins Hosp. **24**: 327-342, 1913.

11. Rosenthal, S. M.: A New Method of Testing Liver Functioning with Phenoltetrachlorphthalein, IV, The Relation of Impaired Function in the Amount of Normal Liver Tissue, J. Pharmacol. & Exper. Therap. **23**: 385-393 (June) 1924.

12. Sheard, C.; Baldes, E. J.; Mann, F. C., and Bollman, J. L.: Spectrophotometric Determinations of Bilirubin, Am. J. Physiol. **76**: 577-585, 1926.

13. Graham, E. A., and Cole, W. H.: Roentgenologic Examination of the Gallbladder: Preliminary Report of a New Method Utilizing the Intravenous Injection of Tetrabromphenolphthalein, J. A. M. A. **82**: 613-614 (Feb. 23) 1924.

earlier stages of splenomyelogenous leukemia in younger persons, after the use of radium to reduce the white cells to approximately 30,000, the removal of the spleen sometimes seems to be remarkably beneficial. While the blood does not become normal, carefully selected patients maintain a fairly normal existence for a greater length of time than comparable patients whose spleens have not been removed. A few have lived and were able to work for years.

There are in the body a number of organs which undergo early obsolescence. The thymus disappears at birth. The appendix, as pointed out by Ribbert, gradually undergoes obliterative senile changes which have been miscalled appendicitis obliterans. The lymphatic system, as pointed out by Charles H. Mayo [14] about thirty years ago, undergoes a certain degree of obsolescence with age. The lymph nodes reach the height of their function in early adult life, after which they gradually undergo atrophy and progressive fibrosis. Because of this progressive limitation of the lymphatics, cancer does not spread as rapidly in old persons as in those of the early and middle decades of life. The spleen reaches its height at puberty and gradually becomes obsolescent, so that at middle age it has little function; most of the diseases with which it is associated occur between puberty and middle age.

Review of Splenectomy, April 1, 1904, to March 15, 1926

	Patients	Hospital Mortality	Per Cent
Splenic anemia	115	13	11.3
Chronic hemolytic anemia	1	..	....
Hemolytic jaundice	72	4	5.5
Pernicious anemia	62	4	6.4
Myelogenous leukemia	41	2	4.9
Septic splenomegaly	24	7	29.2
Acute or subacute splenomegaly	2	..	....
Portal cirrhosis (secondary purpura, 1)	19	6	31.6
Biliary cirrhosis	15	1	6.6
Syphilitic splenomegaly	10	1	10.0
Hemorrhagic purpura	13	..	....
Tuberculosis of spleen	8	1	12.5
Gaucher's disease	6	2	33.3
Lymphosarcoma	4	..	....
Lymphoma	3	..	....
Ruptured spleen	3	..	....
Indeterminate hemorrhagic disease with splenomegaly	4	..	....
Wandering spleen	2	..	....
Acute aplastic anemia	2	..	....
Chronic aplastic anemia	2	..	....
Secondary splenectomy; gastro-intestinal hemorrhage	2	..	....
Local bleeding at operation	1	..	....
Hemorrhagic cyst of spleen	1	..	....
Cystic hematoma at hilum of spleen	1	..	....
Secondary splenectomy; spleen adherent at renal tumor	1	..	....
Polycythemia	1	..	....
Tumor, hemangioma	1	..	....
Hodgkin's disease	1	..	....
Eosinophilia with splenomegaly	1	..	....
Neutrophilia with splenomegaly	1	..	....
Carcinoma (?) of liver; secondary cirrhosis	1	1	....
Unclassified	4	..	....
Total	424	43	10.1

This discussion will serve perhaps for the purpose of calling attention to the fundamental diseases with which are associated the bone marrow, the liver and the spleen. Because the spleen is the one organ of the three which can readily be extirpated, much light has been thrown on the study of certain diseases of the blood which have been the source of extended inquiry in modern medicine.

I present in the accompanying table a statistical review of 424 cases of splenectomy. The hospital mortality rather than the operative mortality is given, because many of the patients who were in wretched physical condition recovered from the operation, but remained in the hospital for better care for a considerable length of time, and died there. The object of the study, however, is to determine what we may expect to accomplish by splenectomy, rather than to estimate the operative mortality.

14. Mayo, C. H.: The Surgical Physiology of the Lymphatic System, M. News 85: 769-772, 1904; Tr. South. Surg. & Gynec. A. 16: 442-452, 1903-1904.

ABSTRACT OF DISCUSSION

Dr. William D. Haggard, Nashville, Tenn.: The trouble with pernicious anemia is that the disease is not confined to the spleen so far as the destruction of red cells is concerned. Even when the spleen is removed, the destructive action of the red bone marrow continues. The Germans have undertaken to remove some of the bone marrow, but the results have been extremely unsatisfactory. Splenectomy has been most satisfactory in Banti's disease, particularly if done in the first stage; even in the second stage results are satisfactory, and in the third stage, even with ascites, if the patient is not too old and the hemorrhage has not been too severe, the cures are very gratifying. In cases of hemorrhage a preceding transfusion will change the patient into a surgically safe risk, and a splenectomy will give a most grateful result. In cases of hemolytic jaundice, particularly those of congenital origin, splenectomy absolutely cures, but it does not remove the congenital factor. In cases of leukemia we still must depend on benzene and the roentgen ray. The most gratifying and remarkable results have been obtained in Henoch's purpura.

Dr. Jabez N. Jackson, Kansas City, Mo.: Robert T. Morris some years ago said that we had gone through four cycles in development: the period of mysticism; the anatomic era; the pathologic era, and that finally we are reaching the one important era, the physiologic. Surgeons have learned much of anatomy, perfected largely through surgical technic, and understand many of the mysteries of pathology; yet we must realize that we are handling a person who is a physiologic unit. We ofttimes have heard the statement that an operation was "a beautiful and perfect operation" and yet the patient died; on the other hand, we have seen operations badly bungled with infections and imperfections of technic, and the patients have recovered. What is the problem? The problem is the physiologic condition of the individual at the time the operation was undertaken. The most important factor in the development of modern surgery is to estimate and to equip the individual for a physiologic condition prior to the selection of a surgical procedure. I think we are working on the safe side, as a rule, if we are not able to estimate. Much has been said by Dr. Mayo of the liver and its importance as a great organ of metabolism; that it is an organ which deals with the venous system, primarily. But the most important thing to me is to recognize that the liver stands between the sewer on one side and the body on the other. It is the human physiologic filter, and if the liver is inefficient in its function, toxins get through and then all sorts of secondary things take place. The impressive thing to me in recent years has been that most of my patients who have died, died from conditions that I could not actually account for, except to say that they were toxemias. When these poisons pass through the liver into the kidney, the kidney is overloaded and unable to work, and the patient dies of various and sundry things, but the truth is that the patient has been unable to handle production in his body under normal conditions with the added load of surgery. He is below par and we should help to take the load off the liver so that when the drain is put on it, it can perform as a filter. When we recognize that a surgical subject is a physiologic subject, surgery will make its real modern advance.

Dr. William J. Mayo, Rochester, Minn.: I quite agree with Dr. Jackson that surgery in the next decade will be guided by the newer studies in physiology rather than by the older pathologic concept. As to surgery of the spleen, one should not remove a diseased spleen when the patient is on the down grade. If an operation on the spleen is necessary,

transfusions of blood should be given and every other means employed to get the patient in proper condition before operation. Every spleen in a chronic state of enlargement that is not relieved by medication is dangerous to the patient, who can no more afford to carry around an enlarged spleen than anything else that threatens his life. Splenectomy should be performed, provided there is reasonable expectation that it will palliate or cure, without prohibitive risk. Diseases of the liver, the blood and the spleen must not be considered singly, but from the standpoint of their interrelation.

URETERAL TRANSPLANTATION IN BLADDER CARCINOMA *

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The transplantation of the ureters into the intestine, the sigmoid by preference, is only a part, usually a preliminary part, of what seems to me probably the most rational procedure that we possess at present for the cure of certain cases and perhaps even types of cancer of the bladder. While it is the preliminary part in most cases, one need not assume from this that it is the easy part. As my interest in the transplantation of ureters is wholly in its relation to the broader subject of treatment of cancer of the bladder, I trust I may be pardoned if at times I overstep the strict limits of my title.

At the outset I wish to make clear, perhaps as an excuse for my persistence even with the discouraging results that I shall report, why it seems to me that we must adopt more radical measures; measures that require the transplantation of the ureters, if we are to get better results with our cases of carcinoma of the bladder.

It is true that one occasionally gets good results even in very unfavorable cases, such for instance as in a patient on whom I operated in 1913 and from whom I heard in 1925. I removed from this patient a large squamous-cell carcinoma involving the region of the right ureter and reimplanted the ureter into the bladder; this patient was well twelve years after operation. In spite of this and a few similar instances, that we all have had, the surgical treatment of these cases has been very discouraging even combined as it has been in many instances with the use of radium.

Just how discouraging cases of this type have been in my hands may be inferred from the fact that in 170 operative cases that I have found in my records, there are eighty-six patients that are known to have died either as a result of their operation or of their disease; at the time they were last heard from, eighteen more had a recurrence and they have presumably died by this time, though we have no definite record of their deaths; besides these there are a number of patients from whom we have no report; they probably would increase the number of fatalities and recurrences. Another fact must be taken into account in considering the results in this series of cases; that is, that quite a percentage of the patients, nearly one third, on whom an open operation was done and who are not known to have died, had so-called simple papilloma, often quite small, treated a number of years ago; cases in which the outlook was relatively favorable and that are at present not subjected to open operation but most satisfactorily treated by fulguration.

It will be seen that my known mortality in the surgical removal of tumors of the bladder is more than 50 per cent; my probable mortality, by adding cases in which it was known that there was a recurrence, and so forth, is certainly much higher; such figures as these make one eager for methods promising better results.

It has been quite generally admitted, I believe, that carcinoma of the bladder is relatively slow to give off metastases; that for a long time the disease is confined to the bladder itself. In keeping with this view is the fact that one of my patients who died with a recurrent adenocarcinoma combined with a double renal lesion, showed at necropsy no macroscopic evidence of extension of the disease beyond the bladder. Geraghty,[1] in a paper published in 1922, said: "It is surprising to what extent tumors of the bladder may progress without the occurrence of metastases. We have been astonished in many cases with extensive malignant tumors of the bladder, dying because of sepsis, renal or some intercurrent disease, to find no demonstrable metastases. In twenty-seven cases of bladder tumor coming to autopsy, in which the growths were extensive and true carcinoma, in only three was the pathologist able to demonstrate metastasis." Judd[2] agrees that lymphatic involvement and visceral metastases occur but rarely. I believe it is highly probable that recurrence of the disease in the bladder, combined in many cases with an infected hydronephrosis due to compression of the ureter or ureters by the disease, is a very common way to bring about a fatal outcome in tumors of the bladder that is often attributed to dissemination of the carcinomatous disease.

Speaking wholly from the clinical point of view, I believe we must assume that there is a great tendency for certain bladder growths, more particularly of the adenocarcinomatous type, to begin in the deeper layers of the bladder wall and to extend under the mucosa for a considerable distance beyond where we can see any surface change. I can remember very clearly the instance of a man who complained of vague bladder discomfort and whose bladder on several examinations showed no appreciable surface change yet shortly afterward fairly blossomed out with malignant disease. In the case of a woman who suffered from bladder symptoms and whose bladder showed little in the way of growth, I removed the tissue that seemed to me suspicious; the pathologist reported that the picture was not definite enough for him to make a diagnosis; within a short time the whole bladder was involved in a growth which went on to a fatal termination. In the article already quoted, Geraghty[1] speaks of "a carcinoma of the bladder wall underneath the mucosa" that appeared in a patient who had been treated with radium for a growth in another part of the bladder; the first growth had disappeared. I cannot help likening many of these cases to a fire in a partition in a house which may break out a long distance from the point at which it was first discovered but which investigation will show has extended by continuity between these points. In light of the poor results from palliative operations due largely to local recurrences, the logical course to pursue in infiltrating growths of the bladder would seem to be the removal of the bladder itself, at least until such time as we can get definite figures as to its usefulness or the reverse. In cases in which the bladder

* Read before the Section on Urology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Geraghty, J. T.: Treatment of Malignant Disease of the Bladder and Prostate, J. Urol. 7: 33 (Jan.) 1922.
2. Judd, E. S.: Results in the Treatment of Tumors of the Urinary Bladder, Collected Papers by the Staff of St. Mary's Hospital, Mayo Clinic, 1912.

outlet is involved, nothing less than a removal of the whole bladder will give any permanent result. Likewise cases of recurrence after operation, except such recurrences as can be cared for by application of the high frequency current, should, I believe, have radical operation.

Cystectomy has been relatively little used, partly because of the technical difficulties of the operation but mostly because of the preliminary difficulty of dealing with the ureters in a satisfactory manner. In spite of the advocacy of permanent lumbar nephrostomy by Dr. F. S. Watson [3] and the advantages of its simple technic and efficiency, it has been a very trying and unsatisfactory procedure in the few cases in which I have used it. Bringing the ureter to the surface in the loin or on the abdomen like this leaves much to be desired.

We are indebted to Coffey [4] for devising an improved method of transplanting the ureter into the lower bowel, which is based on some experimental work he did on the common bile duct a number of years ago and which he saw had a bearing on uretero-enterostomy. C. H. Mayo [5] and Lower [6] have contributed to perfecting this procedure, which I believe is going to have a far reaching influence on the treatment of cancer of the bladder.

There are a number of variations in the technic of ureteral transplantation by the "Coffey method," but the essentials, as I understand them, are the cutting of the right ureter about 2 or 3 cm. above the bladder, loosening it from its bed, and making an incision about 1½ inches long on the free surface of the sigmoid as low down as the length of the ureter will admit; this incision cuts through the peritoneum and muscular coat only; the muscular coat is then dissected from the mucosa laterally far enough to make a good bed for the ureter; at the lower end of this incision an opening is made in the mucosa and the lower end of the ureter pushed into the sigmoid for three-fourths inch and secured there; the muscular and peritoneal layer is then sutured over the ureter, usually in layers. The right ureter having been fixed in place, the same thing is done with the left ureter at a point a little higher on the sigmoid. The essential thing is that the ureters be made to run for an inch to an inch and a half within the wall of the sigmoid between its muscular and mucous coat before entering the lumen of the intestine, this because the intra-intestinal pressure exerted laterally tends to prevent the gross dilatation of the implanted ureters. It is, of course, not contended that this can prevent the entrance of bacteria into the implanted ureters. In fact, so far as my experience goes we are almost sure to have a pyelonephritis follow implantation of ureters into the intestines.

Latterly an important addition has been made by Coffey [7] to the technic of uretero-enterostomy by the introduction into the ureter of a tube whose upper end is carried up the ureter beyond the point where it tunnels the intestinal wall and whose lower end is carried through the sigmoid and is used to conduct the urine into a bottle or some other container. This contribution has somewhat simplified the technic and has made possible the implantation of the two ureters at one time.

The size of the tube introduced into the ureter varies somewhat according to its degree of dilatation. I have used tubes varying in size from 8 to 18 F. The tube is fixed in the ureter by a stitch through the ureteral wall and a bit of the tube some 2 or 3 mm. above the cut end of the ureter; this stitch, which may be of catgut or of silk, is then carried about the ureter and tube once or twice and tied snugly. The ureter should be introduced into the intestine about a half inch beyond the point at which this stitch has been tied about the tube. The introduction of this tube renders unnecessary making a longitudinal cut in the ureter and tying a catgut suture through its lower end, which in the earlier technic was brought through the wall of the sigmoid from within out, some three-fourths inch below where the ureter was introduced into the sigmoid; this suture was tied on the outside of the sigmoid; when tightened, it pulled the lower end of the ureter into the sigmoid and when tied anchored it there. It has seemed to me that with the tube in the ureter, the passing of every second stitch in the deeper layer of sutures through a small bit of the ureter wall, according to the suggestion of C. H. Mayo, served the same purpose. This tube makes it easier to prevent leakage and to make a tight suture when one is transplanting a dilated ureter. I infer, however, from Dr. Coffey's paper that he feels that the greatest advantage of the tube in the ureter is that it prevents anuria due to occlusion of the ureter by postoperative edema and that this is what makes it safe to transplant the two ureters at one sitting instead of one at a time, as was done formerly.

I certainly believe that this tube adds greatly to the safety of the procedure, but I am not in agreement with Coffey as to why. In the first place, when one considers the force that even a moderately dilated and weakened kidney pelvis shows in obstruction of the ureter by a stone, I believe it would have little trouble in forcing urine through a ureter even greatly diminished in size by compression. To me it seems more likely that the use of the tubes allows us to determine accurately the output of the kidneys and to anticipate any tendency to surgical uremia—a condition that is symptomless in its first stages but for diminution in the urinary output. We have in these cases of carcinoma of the bladder several factors that predispose to surgical uremia, such as a moderately long etherization in a patient whose ureters have often been partially occluded by compression often accompanied by more or less renal sepsis, exactly the same condition, except for the location of the obstruction, that we have found made long etherization so likely to produce anuria and uremia in prostatic patients suffering from obstruction. To this must be added in some instances chronic sepsis due to a foul, often gangrenous bladder, which cannot but affect the kidneys deleteriously. It is this last addition to the Coffey technic that has stimulated me to attempt again, after an interval of several years, the radical treatment of cancer of the bladder by cystectomy.

In the last year, five cases of cancer of the bladder have come under my care that have seemed to me too far advanced to give promise of anything but very temporary palliation by the ordinary methods of treatment, and yet not so far advanced as to make it impossible that a cystectomy might cure them. Though I have had a fatal outcome in all these cases, several

3. Watson, F. S.: Operative Treatment of Tumors of the Bladder, Ann. Surg. **42**: 805, 1905.
4. Coffey, R. C.: Transplantation of the Ureters into the Large Intestine in the Absence of a Functioning Urinary Bladder, Surg. Gynec. Obst. **32**: 383 (May) 1921; A Technic for Simultaneous Implantation of the Right and Left Ureter into the Pelvic Colon, Which Does Not Obstruct the Ureters or Disturb Kidney Function, Northwest Med. **24**: 211 (May) 1925.
5. Mayo, C. H., and Walters, Waltman: Transplantation of Ureters into the Rectum, J. A. M. A. **82**: 624 (Feb. 23) 1924.
6. Lower, W. E.: Ureteral Transplantation in Inoperable Conditions of the Bladder, J. A. M. A. **73**: 328 (Aug. 2) 1919.
7. Coffey (footnote 4, second reference).

interesting points have come up that may be of use at this time when we are trying to collect the experience of various men in order that we may determine whether or not the procedure is practicable, and if so, to determine what are the essentials for success and how best to carry them out.

REPORT OF CASES

CASE 1.—A man, aged 54, seen, July 15, 1925, had presented symptoms ten months; cystostomy; two and one-half months before cautery and radium, suprapubic fistula. The patient was using considerable morphine; he begged for anything promising relief.

An abdominal incision was made. The bladder was a rigid, infiltrated mass; there was no evidence of involvement of glands. The right ureter was somewhat dilated; the left, dilated to the size of my thumb. The sigmoid was incised according to Coffey's method. The distal end of the tube, fixed in the right ureter, was sewed to a rectal tube passed up the sigmoid, and the remainder of the tube fed into the rectum; the sigmoid was closed over it in two layers. The ureter was pushed into the sigmoid about a half inch. The dilated left ureter was freed, clamped and cut; an 18 F. catheter passed up it easily. The sigmoid was incised slightly higher and to the left of the incision for the right ureter; the tube in the left ureter was also attached to the rectal tube and the ureter carried into the sigmoid for about a half inch and fixed with two layers of sutures. By pulling out the rectal tube, the tubes in the ureters were brought out the anus; the peritoneum which had been incised in freeing the ureters was brought together over these with a continuous suture. As there had been some soiling of the peritoneum, a rubber wick was carried down to the region of the suture. In spite of subpectorals of salt solution, there was no secretion from the right ureter for nearly thirty-six hours, and practically none from the left side, the side of the hydroureter, until nearly forty-eight hours after operation. In the first forty-eight hours after operation the patient received 5,000 cc. of salt solution subcutaneously; he received 20,000 cc. in the first eight days. This patient had but little fever at any time; he had considerable vomiting at first, diminished by gastric lavage; he had also moderate soft distention and hiccups until his kidneys got to acting freely. Three days after operation a little urine came along the wick; about the fourth day there were involuntary bowel movements; urine as such was noticed coming from the rectum seven days after operation; on the tenth day after operation the tube placed in one ureter came away, and that in the second ureter came away on the sixteenth day. Varying amounts of urine leaked from the track of the abdominal wick for twenty days. The patient's convalescence was complicated by an infection of the right breast, undoubtedly due to the subcutaneous salt solution. Thirty days after operation the patient died of exhaustion and sepsis; at no time was it possible to consider cystectomy, the real object of our operative intervention. At times the patient held urine in the rectum for two hours.

Necropsy showed the liver to be normal; there were no glands along the aorta; the joints between the ureters and the sigmoid were tight; the left kidney was about one-half the normal size and was covered with scars; the right kidney was of about normal size, and showed scars and areas of fibrous tissue. The left ureter, which was dilated and thin-walled at the time of operation, now seemed normal in size and thickness; there was no dilatation of the left kidney pelvis.

Deep in the pelvis near the right ureter was a pocket containing perhaps 1½ ounces of pus. There was no elevation of temperature to indicate its presence. The bladder was well infiltrated everywhere, but at its top; it also was filled with sloughing, papillomatous material. It was of interest to note that our suture was good in spite of temporary leakage, that a much dilated ureter contracted to normal in a month, and that there was no gross evidence of dissemination of the malignant disease beyond the bladder.

CASE 2.—A man, aged 49, seen in September, 1925, had passed bloody urine for a year. He had lost 20 pounds (9 Kg.). He was wearing a urinal. Cystoscopy under spinal anesthesia showed a bladder covered with masses of low papillary growth, with a good deal of ulceration.

October 5, the abdomen was opened. The bladder was thickened and slightly irregular, the size of a moderate sized orange; some glands were low in the pelvis, which, with the ulcerated condition of the bladder, did not seem necessarily malignant. The sigmoid was movable. Both ureters were somewhat enlarged. They were mobilized, tied off below, clamped and cut. Catheters were introduced into both ureters; an incision in the anterior surface of the sigmoid was prepared for each ureter. The intestine was opened and a tube in each ureter caught to the rectal tube that had been passed up the sigmoid and the end of the ureter was pulled into the sigmoid; the incision in the sigmoid was closed in two layers over the ureter. Because of the relative shortness of the ureters, my line of suture seemed to be more at a right angle to the intestine than parallel with it. As there had been annoying oozing from the beds from which the ureters had been raised, rubber wicks were carried down to these points.

On the fourth day after operation there was a curious attack in which the patient could not speak and appeared to have a right hemiplegia; a little urine also leaked along the rubber wicks. The patient was better the next day.

The first tube was passed ten days after the operation; the second, fourteen days after the operation. Two weeks after the operation, the patient passed a little feces through the abdominal sinus for a day or two. The abdominal incision healed about one month after the operation. There were one or two attacks of what was probably pyelonephritis. This patient, at his best, could hold urine in the rectum for about an hour.

November 24, under ether, I began the perineal separation of the prostate from the rectum. As it was slower than I had expected, I did not continue with the removal of the bladder. The patient was but little upset.

December 5, an incision was made above the pubes with a cross cut to the right pretty well through the rectus; the bladder was freed at the sides and behind; on the right side there was a question of some glands; there was no question of trying to remove them; the bladder was accidentally opened behind; the peritoneum also was accidentally opened and closed. I separated the bladder in front and cut across the urethra just anterior to the prostate. I tied off the inferior vessels. The vesicles were cut across below as well as the vasa above. The wick and drainage tube were carried from the cavity through the perineum; a tube was inserted above, around which the abdominal walls were sutured. There was a mild upset following the operation, but the patient did pretty well for five days. Then he had fever and rapid pulse, hiccuping, tenderness in the left loin, and evidence of a very severe pyelonephritis. The patient was given salt solution subcutaneously. Seven days after operation, the man complained that he could not see, although there was no evidence of blindness; the discharge from the wound was offensive; the patient became dull and died nine days after cystectomy, from no evident cause other than the pyelonephritis and local sepsis.

Necropsy showed that the region of the pelvis from which the bladder was removed was a sloughing cavity; this did not extend through into the peritoneum. The right kidney was smaller than the left; its ureter was normal. There were two gangrenous areas in the left kidney; the left ureter was two or three times the size of the right. The implantation of the right ureter was perfect; on the left there was a question of leakage. In the peritoneal cavity I found no fluid or other evidence of peritonitis, nor could enlarged glands be demonstrated. The man apparently died of his pyelonephritis and sepsis from a sloughing pelvic cavity.

CASE 3.—A man, aged 55, seen Nov. 27, 1925, had on routine health examination shown a few casts in the urine since 1921; for six or eight months he had had frequent urination; at one time he got up every hour at night, the diurnal frequency varying from every quarter of an hour to two and one-half hours; for some months he had a feeling of fulness over the pubes; a week previous he had passed a very small clot, the only evidence he had shown of definite local disease. The urine was transparent; the prostate was rounded, elastic, and within the limits of normal; there was, perhaps, a little tenderness over the pubes; the catheter showed no residual urine. Cystoscopy showed a great area of edema bullosum above and behind as though the bladder

was being invaded from the abdominal side. Further examination showed the whole left side of the bladder pretty well involved, the growth extending down from the vertex to the ureter on the left; it was hoped that a partial resection might be feasible.

December 3, a median incision was made; the peritoneum was pushed back; the bladder was found to be a hard, infiltrated mass, and any hope of a partial resection seemed futile. At the request of the patient's wife and his physician, we decided to attempt a radical operation. The right ureter was slightly increased in size; the left was not. The operation of implanting the ureters into the sigmoid was carried out as in the previous cases by means of tubes. The operation was long and hard; a wick was carried down to the seat of the suture. Distention began in forty-eight hours and persisted from that time on; stupes, solution of pituitary, rectal tubes, and so forth, together with salt solution under the skin and stomach lavages, were used. The bowels would move and the patient would pass gas, but distention continued. On the fifth day, epigastric fulness was very marked; the stomach tube drew off 48 ounces (1,400 cc.) of fluid; the abdomen became soft and distention much less.

On the eighth day both tubes were getting out a good amount of clear urine; the temperature was up to 101, and the pulse was 120; there was resistance in the left loin, and also tenderness in the left leg below the knee, believed to be phlebitis; on the ninth day some urine came through the incision; on the tenth day after operation there was no residuum in the stomach; the patient was quite bright, and was taking nourishment well; there were many involuntary dejections. During the night he became dull, and on the eleventh day was very dull; there was not much distention; he had a good many dejections, and would take nothing by mouth; there was a mottling of the left leg as of a thrombosis; the salt solution was kept up. On the twelfth day the patient could not be roused, he had several little convulsions, and died that afternoon.

Necropsy showed the intestine filled with fluid, as was also the stomach. There was no fluid in the peritoneal cavity, however. A loop of intestine (ileum) was found adherent to the abdominal incision; this probably caused a partial obstruction. Another loop was adherent to the point where the ureters had been implanted. The sigmoid itself was almost gangrenous around the region of the suture; the left ureter was held in place by a small band of tissue at one point; the right ureter appeared about ready to break away. There was a slight pyelonephritis on the right. Removal of the bladder showed that it was involved in a carcinomatous infiltration at all points except a small place, about 25 mm. in diameter, on one lateral wall. Carcinomatous infiltration seemed to extend to the outer wall of the rectum, although it caused no ulceration in the rectal mucosa. Microscopically, both were carcinoma; an extension from the bladder to the rectum, I should think. The prostate was normal; there was thrombosis of the left common iliac extending downward. My only explanation of the necrosis of the sigmoid and the local sepsis is that there was a definite infection of my operative wound in the walls of the sigmoid that apparently began some days after operation.

The disappointing results obtained in the three reported cases led me to consider whether there was not some plan by which I could remove the bladder first; for since the main object of the whole procedure was the removal of the diseased bladder, it hardly seemed logical to carry out the different steps of the procedure in such a way as to make it quite probable that there would be, in a proportion of the cases, a considerable delay in the removal of the diseased bladder, due to little slips in the technic of transplanting the ureters. Likewise, it seemed to me probable that getting rid of the sloughing bladder, and relieving the kidneys of any back-pressure that there might be from compression of the ureters, would materially better the patient's chance of withstanding the ureteroenterostomy. There seemed to me, too, a probable advantage in having the ureteral implantation made as low as was reasonably possible, at least until such time as we determined whether there was going to be a tendency for the new ureteral openings to contract; as, for instance, was the case with some of the permanent nephrostomy sinuses. Should dilation be necessary, it would presumably be much easier to see and dilate an opening in the lower part of the rectum than would be the case with one higher up. With these points in view, I have in two instances done the cystectomy first and anterior to the peritoneum; my hope and expectation being that I would be able to implant the ureters into the rectum anterior to the peritoneum, either at the time of the cystectomy or later. I will give short reports of these cases.

CASE 4.—A man, aged 44, seen Dec. 1, 1925, had the first symptoms five months before, when there were two retentions and hematuria; at the time of the examination, the bladder was full of clots; the prostate and loins were normal. Cystoscopy showed the bladder pretty well involved with what looked like an infiltrating growth, with the exception of a small area at the right of the outlet.

December 7, an examination under ether convinced me that a cystectomy would be the only way to offer any chance of cure; I planned to do a prostatocystectomy and to transplant the ureters into the rectum anterior to the peritoneum. I separated the prostate and the vesicles from the rectum by a perineal incision. As the man's condition was not satisfactory, I packed the perineal wound with rubber wicks; the patient had a sharp pyelonephritis during his convalescence.

Fourteen days later I made a median abdominal incision, and pushed the peritoneum back; I separated the bladder from its attachments and removed it; the previous perineal dissection made this easy. The removed bladder was generally involved with an infiltrating growth. Tubes were put into the ureters where they were cut. The surface of the rectum that was exposed by the removal of the bladder seemed well adapted for the implantation of the ureters, but as the man's condition was poor, I packed the pelvic cavity gently with gauze, carrying a tube from the cavity out through the perineal wound, and bringing the tubes from the ureters out through the suprapubic incision. The patient's general condition was satisfactory for the first three days. There was no drainage for forty-eight hours, and then only from the left ureter. There was none from the right. On the fourth day he had a cough and bloody sputum, and an area of consolidation developed in the left chest; the left kidney was excreting well; the right was getting out only a little bloody fluid.

The fifth day his condition seemed less good; there was less urine, and his temperature was higher; his condition grew constantly worse and he died that evening.

A partial necropsy revealed the left kidney perhaps a little congested; neither one was dilated; in the right renal pelvis there was a little clot, but there was no evident reason why it had secreted so poorly; the lower end of the right ureter looked a little sloughy; the pelvic cavity was clean; death apparently was due to an embolic pneumonia. Microscopically, the bladder showed carcinoma; also the pathologist reported that he found carcinoma in a piece of the prostate, in spite of the fact that I had recognized no abnormality of the prostate at the time of my examination.

CASE 5.—A man, aged 47, seen, Jan. 11, 1926, had had pain referred to the neck of the bladder with hematuria for six months; at first he was given medical treatment, later three fulgurations, and then deep roentgen ray. The urine was bloody, with clots and bits of tissue; the prostate, loins, groins and suprapubic region were normal. Cystoscopy showed the bladder outlet on the right and above involved in an infiltrating growth; on the posterior part of the bladder, there was a sloughing area; the ureters looked free.

February 8, the patient was given ether, and I attempted cystectomy anterior to the peritoneum. As the peritoneum was adherent to the bladder, a piece was excised and the peritoneal cavity closed; I then separated the bladder at the sides behind and in front, and cut the superior vesical arteries. When I had gone down to the region of the ureters and the

lower vesical arteries, the patient's condition became poor, and I packed the wound with rubber covered wicks and brought the incision together about them with through and through sutures.

Nine days later I separated the prostate from the rectum by a perineal incision; I removed the sutures and wicks in the abdominal incision; separated the bladder from the urethra; turned it back, and clamped and cut the ureters and inferior vesicals; the right ureter was dilated. Tubes were placed in both ureters and brought out through the perineal incision; but I did not dare to take the time to put ureters into the rectum; wicks were inserted through the perineum and abdominal incision.

By the second day after the operation, the kidneys began to secrete and I collected 40 ounces (1,200 cc.) of urine in twenty-four hours, mostly from the left ureter; bloody fluid came from the right. The next twenty-four hours, more than 100 ounces (3,000 cc.) of urine was collected; there was rise of temperature, and the patient was distended considerably; there was hiccuping now and then, and resistance in the right loin; there was a question of pyelonephritis; salt solution was given subcutaneously; lavage of the stomach was done; stimulants, and so forth, were administered; I also had to resort to enemas to relieve distention; on the fourth day I question whether he passed a little urine through the perineal incision; by the sixth day the patient was better; on the eighth day he was less distended and seemingly better; the tenth day he showed some edema, and from that time failed steadily and died on the fourteenth day after the operation; his right pyelonephritis and exhaustion seemed to be the determining causes of his death, but no necropsy was permitted.

COMMENT

At the time I did these operations I was not aware that Fischel [8] had reported a case in 1925 in which a total cystectomy was carried out anterior to the peritoneum, and the two ureters were fixed in the rectum at one sitting. I should call the result a brilliant one; Fischel, however, seemed to think that the patient had been very uncomfortable and doubted the feasibility of the operation.

There are several points on which I will comment briefly. Keeping a good sized tube in the rectum for some days after implanting a ureter, as suggested by Stater,[9] probably safeguards the suture by preventing the accumulation of gas and bowel contents. I did not do this, but I think it is probably a wise thing to do.

The later technic of feeding the tube inserted in the ureter into the intestine is better than sewing it to a tube introduced into the rectum. In the first place, I have seen difficulty in introducing a rectal tube as high as the sigmoid; in the second place, a rectal tube that is stiff enough to go up the sigmoid must be quite stiff, and my experience has been that before one is able to sew the end of the tube that is in the ureter to this, he has made his opening into the sigmoid bigger than it would otherwise have to be and has perhaps, as happened, I believe, in my third case, pretty well infected the incision. I have thought of the possibility of using an appropriate sized sterile gum elastic bougie introduced through the incision in the sigmoid, with the free end of the tube in the ureter tied over its upper end, as a means of getting the tube through the anus, and using the bougie as a guide. This would be simpler than using a proctoscope, provided that it would work. I have not tried it.

In my cases, contrary to Dr. Coffey's experience, there has been practically no sustained excretion of urine for some time following operation. I have thought that a little fluid which appeared early was in one case, at least, due to the emptying of a hydronephrosis. Excretion has ordinarily not begun much earlier than thirty-six hours after operation, and that in patients in whom we feared anuria, and on whom we used large amounts of salt solution under the skin, caffeine, and so forth, to stimulate kidney activity. I believe this gaging of the kidney's activity and the timely warning we are given of impending kidney failure are the great purposes that the tubes in the ureters serve. I do not necessarily believe that the fatalities that have come in instances in which the two ureters have been transplanted at one time have been due so much to pinching of the ureters by the reactionary edema as to the fact that the long etherization necessary has produced a surgical anuria unrecognized during its earlier stages because we had no method of determining the way the kidneys were functioning.

In men, it seems to me that the operation to which we must have recourse in the greater number of cases is prostatocystectomy. This operation is probably too long a one to be performed at one sitting in many of these patients. It seems to me from such experience as I have had that it will probably be wise to separate the prostate from the rectum at one operation, which may be done a few days earlier than the main operation, under spinal anesthesia, thus saving the kidneys the irritation of an extra etherization.

The extraperitoneal cystectomy may be done under ether at a somewhat later time, and if conditions warrant it, the ureters may be implanted into the rectum by the Coffey technic at the same sitting. If conditions do not warrant the implanting of the ureters, the tubes inserted into them may be brought out through the abdominal or perineal incision. I have found it possible to stop one's operation, without prejudice, so to speak, after the perineal dissection, after a partial dissection of the bladder which has even gone as far as the cutting of the superior vesical arteries, or after the bladder has been removed.

In both the intraperitoneal and extraperitoneal cystectomy, inserting a ureter catheter into the ureter expedites locating it. Unfortunately, I have usually been unable to do this. A point that I believe is generally misunderstood is that a large number of patients with tumors of the bladder die from renal sepsis due to compression of a ureter. In a very large proportion of the reported cases in which the ureters have been transplanted, one or both have been reported as dilated; also in necropsies on patients who have died of cancer of the bladder, it is very common to find this condition. None of the methods other than cystectomy or resection of the bladder with reimplantation of the ureters meet this condition. In certain patients in whom the permanent cure of the disease seems improbable, it may be that the palliation offered by implantation of the ureters into the sigmoid, combined with the removal of the bladder, may be of sufficient advantage to the patient to warrant advising the risk. The transplantation of the ureters in tumors of the bladder must of necessity be attended by a greater mortality than is the case in patients with exstrophy.

In spite of the poor results obtained in this series of cases, I am very firmly of the opinion that total cystectomy, either preceded or followed by transplantation of the ureters, is our best way of dealing with extensive infiltrating tumors of the bladder, and also with stubborn recurring growths of the papillomatous type, as well as with growths involving the bladder outlet.

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8. Fischel, Ellis: Total Cystectomy for Cancer—An Obsolete Operation, J. Urol. **14**: 285 (Sept.) 1925.
9. Stater, W. J.: Transplantation of Ureters into the Rectum, Northwest Med. **25**: 41 (Jan.) 1926.

DEEP ROENTGEN-RAY THERAPY IN THE TREATMENT OF CARCINOMA OF THE BLADDER *

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In 1923, and again in 1924, I presented before the American Roentgen Ray Society the results obtained in the Brady Urological Clinic, in bladder carcinoma, by means of deep roentgen-ray therapy.

The basis of the present report comprises 120 cases of bladder tumors divided as follows:

1. Papillomas, benign and malignant.
2. Noninfiltrating papillary carcinomas.
3. Infiltrating carcinomas, superficial and deep.

The foregoing groups of tumors have been observed over a period of four years.

One of the most serious complications in the treatment of bladder tumors, following irradiation of any kind, is a burn. In a certain number of instances, local and systemic reactions which, at times, reach alarming proportions undoubtedly occur.

It is well known that when a patient is exposed to a series of roentgen-ray treatments a cumulative effect is produced, and this should be closely watched for from day to day by the urologist himself. It has seemed to me that the cumulative effect of roentgen rays on a patient occurs in direct proportion to the debilitated physical condition of the patient. Thus, an old man with a papillary carcinoma of the bladder, greatly debilitated from long continued suffering, requires more careful watching during the course of his deep roentgen-ray therapy than would a younger and a stronger man.

Among the earliest symptoms of radiation intoxication may be mentioned nausea, vomiting, prostration, diarrhea, rectal burning, and tenesmus. Repeated examinations of the blood should be made to determine the effects on the white blood corpuscle count in particular, though counts of the red blood cells and hemoglobin estimations should also be made. The number of white blood cells is reduced much more rapidly following irradiation than is that of the red cells. It is rarely safe to treat a patient further when his white count has fallen below 4,000.

The necessity of careful and close cooperation of the urologist with the roentgenologist is therefore obvious. Many of the ill effects could be avoided if the roentgen-ray treatments were more closely observed by the roentgenologist and the urologists, and not left so largely to mere technicians.

Despite the disturbing reactions that are not wholly avoidable, the relief afforded to two symptoms of bladder cancer, namely, root pains and hematuria, justifies the treatment. Even when no other benefit is obtainable, these two distressing symptoms rarely fail to be relieved with roentgen-ray therapy.

There is no subject in urology concerning which opinion has differed more from time to time than that of the treatment of bladder tumors. For many years the sole treatment consisted of excision, when possible, of the tumor, with or without some portion of the bladder mucosa. Later, a more radical procedure, which consisted of resecting the surrounding bladder wall, was carried out. Thus Young, in 1913, reported the results obtained in 117 cases in the Johns Hopkins Hospital, and I mention his report simply to allow comparison with the results of methods that can be employed today. Of his tumors, 83 per cent were malignant, and excision as practiced then was nearly always followed by recurrence; this was true not only of the malignant growths, but of the benign as well.

After the introduction of fulguration by Beer in 1910, it was shown that both the benign and the malignant papillomas could be successfully handled by this intravesical method with results much superior to those obtainable by any surgical procedure. It was soon found, however, that though fulguration was successful in the handling of papillomas, it was worse than useless in the treatment of papillary carcinomas (either superficial or infiltrating).

With the introduction of radium therapy (by Pasteau and Degrais, and by Schüller, in 1913) and later of deep roentgen-ray therapy, and still more recently of diathermy, a new chapter has been added to the treatment of bladder tumors, and by the application of these measures it has been possible in a considerable number of cases to destroy extensive infiltrating growths that were hopelessly inoperable.

Experience has shown that with the use of intravesical applications of radium, superficial papillary carcinomas (which comprise about 15 per cent of all bladder tumors seen) can be handled successfully; yet no success is to be obtained by this method of irradiation when the tumor is deeply or extensively infiltrating. Nor when a superficial or noninfiltrating papillary carcinoma involves a large extent of bladder surface is intravesical treatment with radium satisfactory, owing to the fact that too large an area has to be treated.

It has been the experience in our urologic clinic that about 10 per cent of the infiltrating carcinomas are either sufficiently circumscribed or so situated as to permit a successful radical resection. But not infrequently a tumor, even though comparatively small, is located on the trigon, or involves the vesical orifice in such a way that the performance of radical excision with any hope of success would mean the transplantation of the ureters, the removal of the posterior portion of the prostate, and the excision of the trigon—a surgical procedure that is technically difficult, and now rarely justifiable.

Today, by a combination of fulguration with the application of radium to the surface of tumors through the urethra, on the one hand, and by destruction of the carcinoma by the cautery after suprapubic incision, on the other hand, about 75 per cent of tumors can be removed. This leaves about 25 per cent of hopeless tumors that occupy positions which render them inoperable, or involve such extensive areas of the bladder wall that neither surgery nor intravesical radium treatment offers any chance of success.

In the later development of radium therapy, it has been demonstrated that in a certain percentage of the hitherto hopeless infiltrating cancers the tumor can be destroyed by opening the bladder suprapubically and implanting either radon tubes or radium element in the tumor area. Recently, because of the sloughs from deep radium burns produced by bare radon tubes, we have discontinued their use, and have been employing in the type of case mentioned only thoroughly screened radium needles.

From the statistics quoted, it is clear that there still remain many cases unsuitable for fulguration, for intravesical radium treatment, for resection, or for

* Read before the Section on Urology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

treatment by radium needles; in such cases, if benefits are to be obtained, some other measure must be applied. It is just here that deep roentgen-ray therapy, with its modern and improved methods of application, seems to offer real help.

In 1923 I studied a series of sixty-seven cases of vesical carcinomas treated by different means of radiation, as follows:

1. Twenty-five cases treated by implantation with emanation points or needles.
2. Twenty-one cases treated with deep roentgen ray alone.
3. Twenty-one cases treated with a combination of deep roentgen ray with intravesical applications of radium.

I shall discuss only the results in the series treated by deep roentgen ray alone. Of these twenty-one cases, all but four were extensive infiltrating papillary carcinomas.

One of these four cases was an extensive superficial noninfiltrating papillary carcinoma, which received two complete series of roentgen-ray treatments, the dose amounting to 130 per cent each time without any benefit.

A third series of deep roentgen-ray treatments, in combination with radium applied to the surface of the tumor through the urethra, caused a rapid disappearance of the growth.

In another case, a large papillary mass responded promptly to roentgen-ray treatment, and later was seen cystoscopically to be made up of four separate tumors which had superficially fused.

A third case was that of a large noninfiltrating papillary carcinoma covering the whole posterior bladder wall, which responded promptly to roentgen ray, and the tumor disappeared.

The fourth case of this series was a superficial papillary carcinoma in a very elderly man, 88 years old.

Of these four superficial noninfiltrating carcinomas covering a large area of the bladder, three were apparently destroyed under roentgen-ray therapy alone, but the first case mentioned was a complete failure under roentgen ray alone. In this case, however, a prompt response was obtained to roentgen-ray treatment in combination with a small amount of radium applied to the growth through the urethra.

Seventeen cases were all extensive infiltrating carcinomas, many of the patients being almost moribund, and only a fractional part of the roentgen-ray treatments could be given. In none of these cases did we secure any results from the deep roentgen-ray treatments alone, with but two exceptions. One patient was explored with the possibility of implanting the growth with radium needles, but the carcinoma was found to have invaded at least two thirds of the bladder wall with an extensive extravesical growth. The wound was closed, the bladder not being opened. Ten days later, roentgen-ray therapy was started. On completion of the roentgen-ray treatment, the patient left the hospital with no improvement in his symptoms. He was voiding every few minutes with agonizing spasms, although he was receiving about 12 grains (0.8 Gm.) of morphine daily. Two months later the patient's son reported that his father was well on the road to recovery, urinating without pain and at normal intervals, and that he required no morphine. The patient was not examined by cystoscope. The improvements, in this case, can be attributed only to the deep roentgen-ray therapy, and the patient lived fourteen months in comparative comfort. In the other case, a large papillary carcinoma, which failed to respond to intravesical radium therapy over a period of several years and which became an extensive infiltrating growth with a palpable mass above the symphysis, promptly responded to one series of deep roentgen-ray treatments, and the patient has remained perfectly well for two years—the mass above the symphysis disappearing along with the marked frequency of urination and pain. This result can also be attributed only to the roentgen ray.

In five of these seventeen cases, in which no improvement was obtained from the roentgen-ray treatments, the bladder was subsequently opened and the tumors implanted with radium. In two of these the cancer disappeared, and no tumor could be found cystoscopically. In two, no benefit was obtained; five cases were lost sight of.

CONCLUSIONS

Our experience up to this time would seem to warrant the following conclusions:

1. The best treatment for superficial papillary carcinoma, whether localized or extensive, is a combination of deep roentgen-ray therapy with applications of radium applied directly to the surface of the growth. Radium alone has been very successful in handling this type of case, but frequently so much radiation is required that the destruction of the tumor is followed by a severe radium ulceration. In our experience, the results obtained by the combination of deep roentgen ray with radium are better when the tumor has received from 600 to 800 milligram hours of radium before the roentgen-ray treatment is started.

2. By the combination of radium with roentgen-ray treatment as outlined, most of these tumors can be destroyed with a minimum amount of injury to the bladder, and in many instances with but little or no irritation of the bladder mucosa.

3. When the growth is an infiltrating carcinoma, though still operable, we believe that radical resection should be carried out, since it offers the greatest chance of complete cure.

4. Twenty-five per cent of the infiltrating growths in our series occupy positions that render them inoperable, or they are so extensive that radical removal is impossible. In this group, when it is possible to apply radium directly to the growth, both radium and deep roentgen-ray treatments should be given a trial, for in a certain number of the cases favorable results can be obtained by this method alone. But in cases in which this procedure does not yield the results hoped for, or in cases in which one feels that the growth is sufficiently localized to warrant implantations of radium needles, the bladder should be opened suprapubically, and screened radium needles should be implanted throughout the growth. But if the growth is so extensive that a total of more than 2,500 milligram hours is necessary, in order thoroughly to destroy the cancerous areas by implantations, this method should not be considered. Within the last few years, diathermy has been used in a number of clinics. Our experience with this form of therapy is too recent to warrant the drawing of any definite conclusions.

5. Finally, the great tendency to recurrence of tumors of the bladder, following their apparent destruction by fulguration, irradiation or deep roentgen-ray treatment, makes it imperative that patients return at frequent intervals for cystoscopic examinations. In at least

five of our patients, in whom recurrences ultimately resulted in death, complete cures might well have been obtained had they returned regularly for observation and treatment before the recurrences had become too extensive. In a few cases in which the patients have returned for observation, the recurrences, when found, have responded well to radium alone. This is especially true of the noninfiltrating papillary carcinomas. Even in cases that are incurable, regardless of the treatment employed, deep roentgen-ray treatment is an excellent palliative measure, in that it tends to control hemorrhages and to decrease nerve root pains.

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THE TREATMENT OF CARCINOMA OF THE BLADDER BY RADICAL SURGICAL METHODS *

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The idea that carcinoma originates in a single area is borne out in the case of carcinoma of the bladder. Furthermore, carcinoma beginning in the tissues of the bladder usually remains confined to these tissues. Only in rare instances does it metastasize to distant regions or extend beyond the confines of the bladder and perivesical tissues. Death occurs indirectly from the effects of carcinoma of the bladder but directly from secondary infection in the surrounding tissues and in the kidneys. Because of the tendency for carcinoma of this organ to remain local, it should especially lend itself to radical resection, and the results of radical surgical treatment in these cases should be better than they are at present.

The functioning mechanism of the bladder depends on the sphincter muscles controlling the outflow, the ureteral orifices through which the urine enters the bladder, and, in operations on the bladder, a sufficient amount of bladder wall to contract and expel the urine. If the bladder is to be of any use, the sphincter control must be preserved. So far as the ureters and ureteral orifices are concerned, one or both of these structures may be transplanted to other parts of the bladder; or, if malignancy involves the lower end of one ureter, it would be justifiable to ligate this ureter, provided the opposite ureter is functioning. Under these circumstances a permanent ligature should be used, and the removal of the kidney later will be necessary in only a small proportion of the cases, probably those in which considerable renal infection existed. Carcinomas of the bladder most often start near one of the ureteral orifices, so that removal of the lesion involves some method of disposing of the ureter. Transplantation into some other quadrant of the bladder should be the procedure of choice, but for some reason, in the cases in which we followed this plan at the clinic, the percentage of recurrence was higher than in those in which the ureter was ligated. It is possible that, in preserving the lower end of the ureter in order to reimplant it, we unknowingly left in a small amount of carcinomatous tissue. Whenever one ureter can be ligated without serious consequences in cases in which the renal function is known, and whenever it seems to offer a much better outcome, we have been inclined recently to remove the lower few inches of the ureter with the growth in those cases in which subtotal cystectomy is performed. This is carried out only in cases in which the ureter's proximity to the growth makes its preservation a much less radical operation.

The question of whether resection of the bladder should be carried out by an extraperitoneal or by a transperitoneal approach, it seems to me, depends entirely on the situation of the neoplasm and on whether it is necessary to open the peritoneum for better exposure. Formerly, in many cases, I opened the peritoneal cavity widely and packed it off during resection of the bladder. Some time ago it was found that a better plan, when it was an advantage and a necessity to open the peritoneum, is to open the peritoneal cavity first and excise the involved portion of the peritoneum attached to the growth. The peritoneal flap at the base of the bladder is freed from the bladder and surrounding tissues, and then sutured to the flap from the anterior parietal peritoneum, in this way closing the peritoneal cavity again before resection of the bladder is carried out. When we first developed this transperitoneal method of resecting the bladder we thought it was original, but we later learned that the same method had been used in some of the Russian and French clinics. One should not hesitate to perform a transperitoneal resection if anything may be gained by it. Many times we have opened the peritoneum and excised large pieces, and convalescence has been practically the same as when the extraperitoneal route was employed. The peritoneal cavity should be closed completely and not drained after transperitoneal resection.

The results of radical operations for carcinoma of the bladder have not been as good as expected, and yet they are about the same as those obtained in radical operations for carcinoma of the breast, stomach, colon and other regions. Carcinoma originating about the head, face and neck is in some ways comparable to carcinoma of the bladder, particularly in that it remains a local disease. Less than 1 per cent of cases coming to necropsy following death from carcinoma of the head, face and neck show any extension of the disease below the clavicle. Death is usually due to infection and pneumonia. The ultimate results in certain cases of carcinoma of the face are good because they are less malignant at the onset; on the other hand, some of the more virulent malignant growths in this region show about the same proportion of satisfactory results as carcinomas of the bladder.

A review of the literature shows that the results of surgical treatment of tumors of the bladder are not altogether discouraging. Young and Scott,[1] in reviewing 380 cases treated at the Brady Institute, state that resection of the tumor with removal of a wide margin of bladder wall gives good results in the vertex and anterior and upper lateral walls, and that good results also follow resection of the trigon and ureteral areas. They had 27 per cent of five-year cures in fifty-one cases in which the wall of the bladder was resected. If the growth is extensive they consider the risk of operating too great, and say that 95 per cent of patients with benign papillomas, 75 per cent with malignant papillomas and 25 per cent with infiltrating carcinomas are probably curable by the judicious use of fulguration, radium, the electrocautery and careful radical resection.

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* From the Division of Surgery, Mayo Clinic.
* Read before the Section on Urology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Young, H. H., and Scott, W. W.: The Results Obtained by Various Methods in the Treatment of Tumors of the Bladder, New York M. J. **118**: 262-268 (Sept.) 1923.

Fedoroff [2] reports a series of 165 cases of tumor of the bladder. He advises a two-stage total extirpation of the bladder in certain cases and says that the mortality in a single-stage extirpation is extremely high, from 50 to 60 per cent in the 321 cases that he had collected.

Bristow [3] reports eleven cases in which a two-stage operation was performed without any operative mortality, and Fedoroff adds four cases to this series. In the first stage the two ureters are transplanted to the sigmoid, and in the second, performed from one to three months later, the bladder is removed, in most instances, extraperitoneally. Fedoroff's late results are not encouraging, but he thinks that this may be due to the fact that the disease was too extensive at the time of operation.

Deaver and McKinney [4] report their experiences with 121 cases of tumor of the bladder. Deaver believes that when resection cannot be done without transplantation of the ureters the growth should be destroyed with the cautery or high frequency current, and that resection with ureteral transplantation is generally not justifiable.

Squier [5] groups the sites of tumors of the bladder into a number of definite segments corresponding to the units of lymphatic drainage, and then in removal of the tumors this segmental resection is carried out. He says that when the tumor is situated in one side of the bladder the opposite side should be disturbed as little as possible. Squier had performed segmental resection on seventy-five patients, and twenty were alive without recurrence from two to eight years after operation.

Bugbee [6] thinks that radium combined with operation has been decidedly more satisfactory than operation alone or combined with fulguration.

Kidd [7] reviews his results of treatment of 162 cases of tumor of the bladder. He observed that the cause of death was not so much due to the spread of the disease as to local accident, such as exhaustion from pain and bleeding, and intervention with ureteral drainage leading to dilation of the ureters, pyelitis and uremia. Twenty-six of Kidd's patients had malignant papilloma or early carcinoma, and twelve of these were resistant to diathermy; of twenty-eight patients who underwent partial cystectomy, thirteen were cured.

Damski [8] reviewed the serious consequences of radical operation for extensive carcinoma, and said that the last resort measures are useless, but that in spite of the high mortality, transplantation, followed by total extirpation of the bladder is the only procedure tried thus far that offers even temporary relief in this type of case.

In 1924 Bumpus [9] reviewed 527 cases of tumor of the bladder which had been examined at the Mayo Clinic during the previous ten years, and concluded that radium alone in the treatment of malignant disease of the bladder would not be successful in cases in which other treatment could be used, but that radium would be most useful in association with fulguration or surgical operation. Radium treatment followed by operation seemed to give poor results, and we still feel that if radium has once been applied to malignant growths surgical treatment should not be undertaken later. Bumpus thinks that tumors of a low degree of malignancy that are too extensive to fulgurate or to excise are best treated by cautery, but that the cautery is not applicable to tumors of a high degree of malignancy; these should either be excised or resected. After his review of these cases, he concluded that the degree of malignancy of the tumor is the greatest factor in determining the final result in any type of case.

TABLE 1.—*Tumor of the Bladder: Data from Jan. 1, 1915, to Jan. 1, 1926*

Method of Treatment	Cases	Hospital Mortality	Patients			Average Duration of Disease, Months	Average Length of Life After Treatment or Examination Up to the Present, Months
			Traced	Living	Dead		
None	102	..	81	17	64	31.98	8.90
Cystostomy	37	3	31	3	28	35.75	6.75
Fulguration	75	..	68	65	3	61.00	14.00
Cautery	35	3	30	11	19	28.27	13.77
Radium	35	5	27	1	26	38.95	12.88
Radium with fulguration	43	1	36	25	11	74.70	36.70
Radium and cystostomy	50	5	41	1	40	23.07	6.65
Radium and cautery	14	1	13	3	10	34.50	10.70
Radium and excision or resection	79	5	67	21	46	36.02	21.56
Radical surgery	219	35	165	78	87	44.86	18.57
Surgical diathermy	19	1	16	13	3	22.50	6.66
Total	708	59	575	238	337	37.01	14.35
Transplantation of ureter	47	15	28	6	22	20.90	15.50
Ligation of ureter	48	6	34	11	23	21.88	11.76

Lower [10] reported 108 cases of carcinoma of the bladder, in eighty-one of which operation had been performed. He says that he regards recurrence as no contraindication to operation, and that in fact in some cases the results may be satisfactory. This contention is supported by my results.

TABLE 2.—*Tumor of the Bladder: Data from Jan. 1, 1915, to Jan. 1, 1926*

Grading of Tumors in 261 of the 272 Patients Traced	Cases
Grade 1	21
Hospital deaths	2
Subsequent deaths	3
Living	16
Grade 2	81
Hospital deaths	13
Subsequent deaths	30
Living	38
Grade 3	103
Hospital deaths	14
Subsequent deaths	62
Living	27
Grade 4	56
Hospital deaths	8
Subsequent deaths	32
Living	16

Hand, a fellow in urology at the Mayo Foundation, has recently reviewed all cases of tumor of the bladder (708) seen at the clinic between Jan. 1, 1915, and Jan. 1, 1926, including the 527 reviewed by Bumpus in 1924 (table 1). In these 708 cases the average age of the patients was 55.92 years; 581 were males with an average age of 56.08 years, and 127 were females with an average age of 55.21 years. Two hundred and thirty-eight of the 708 patients are known to be living

2. Fedoroff, S. P.: Ueber die Totalextirpation der Harnblase bei Blasentumoren, Ztschr. f. Urol. **17**: 290-306, 1923.
3. Bristow, A. T.: Adenocarcinoma of the Bladder, Long Island M. J. **5**: 398-400, 1911.
4. Deaver, J. B., and McKinney, W. H.: Carcinoma of the Bladder, Ann. Surg. **78**: 254-259 (Aug.) 1923.
5. Squier, J. B.: Segmental Resection of the Bladder for Neoplasm, Surg. Gynec. Obst. **37**: 179-185 (Aug.) 1923.
6. Bugbee, H. G.: Report of Cases of Malignant Growths of the Bladder Treated by Resection and Radium, J. Urol. **10**: 159-171 (Aug.) 1923.
7. Kidd, Frank: On the Treatment of Epithelial Tumours of the Urinary Bladder, Lancet **1**: 523-527 (March 17), 582-586 (March 24), 636-639 (March 31) 1923.
8. Damski, A.: Zur Frage der Harnableitung oberhalb der Blase bei inoperablem Blasencarcinom durch Nephro oder Ureterostomie, Urologia **1**, No. 3, 1924; abstr. Ztschr. f. urol. Chir. **15**: 50-51, 1924.
9. Bumpus, H. C., Jr.: Modern Methods and Results of Treating Malignancy of the Bladder, J. A. M. A. **83**: 1139-1142 (Oct.) 1924.
10. Lower, W. E.: The End Results of Operations for Cancer of the Bladder, Ann. Surg. **76**: 352-358 (Sept.) 1922.

at the present time. Ninety-four have lived three years or more, sixty-two five years or more, five ten years. Fifty out of 298 patients having surgical treatment alone or surgical treatment with radium lived more than five years, and twenty-eight of 308 patients having other forms of treatment lived more than five years.

In 261 of the 272 cases traced, the tumors were graded according to the degree of malignancy (table 2). Of twenty-one patients with tumors graded 1, sixteen are living, and three have died since leaving the hospital; of eighty-one with tumors graded 2, thirty-eight are living, and thirty have died since leaving the hospital; of 103 with tumors graded 3, twenty-seven are living, and sixty-two have died since leaving the hospital; of fifty-six with tumors graded 4, sixteen are living, and thirty-two are known to have died since going home. Five patients lived ten years; one had grade 3 malignancy, two had grade 4, and two grade 1. It seems to me that grading malignancy according to the histologic picture gives an approximately accurate idea of the degree of the malignancy or virulence of the carcinoma.

The conclusions reached in this paper may not seem to be substantiated by the statistical study of the cases reported, but it is well known that statistics may be made to show almost any sort of result and are often very deceiving. The opinion expressed is based on the judgment attained in the handling of the group rather than on the statistical study of the end results alone.

One hundred and two of the 708 cases reviewed by Hand were too advanced or the patient was in too poor general condition to warrant any kind of treatment. The average duration of the disease in the 102 cases was thirty-two months, and the average length of life after the examination was eight and nine-tenths months, to date. Forty-three of the 708 patients were treated by radium and fulguration, and this group showed the highest average length of life after treatment, which was thirty-six and seven-tenths months. Many of the tumors, of course, were of a low degree of malignancy, and some were definitely benign. Undoubtedly a proportion of the patients in the latter group would have obtained better results if they had been operated on. Fourteen were treated with radium and cautery, and the average duration of life afterward was ten and seven-tenths months, which was very little better than in the patients who were not treated at all. But this figure is deceiving, for some of our very best results have been obtained by the use of the cautery in cases in which the disease seemed well advanced. Seventy-nine of the patients were treated with radium combined with excision or resection, and they lived, on an average, twenty-one and fifty-six hundredths months afterward. Two hundred and nineteen of the 708 were given surgical treatment alone, and the average postoperative length of life was eighteen and fifty-seven hundredths months. Nineteen of the 708 were treated by surgical diathermy. Too short a time has elapsed to determine what the ultimate results will be. However, the immediate results of this treatment in some of the cases in which the disease was very extensive have been extremely gratifying. In some respects, surgical diathermy seems to have a specific action in the treatment of bladder tumors similar to that of radium in cases of cancer of the cervix. If this proves true, then diathermy will be used more often in the future in the treatment of tumors of the bladder. In the group of cases in which surgical treatment alone or excision with radium was employed, one ureter was transplanted in forty-seven and one was ligated in forty-eight cases.

Hand's study also shows that the subsequent deaths were due to the same diseases we might expect in any group of persons of advanced years (table 3). Some were known to have had pneumonia, uremia, embolism, intestinal obstruction and various other diseases, even a brain tumor. In order to be fair in making the statistics, it was necessary to include these deaths among the others, although we do not know that any of the carcinomas recurred in these cases. However, we have fairly accurate information which leads us to believe that death was due to the carcinoma of the bladder in

TABLE 3.—*Tumor of the Bladder: Data from January, 1915, to January, 1926*

Cause of Death Subsequent to Operation	Grade 1	Grade 2	Grade 3	Grade 4	Total
Carcinoma of the bladder	10	39	74	43	166
Pneumonia	..	2	..	1	3
Uremia	..	2	2	..	4
Embolism (?)	..	..	..	2	2
Cystitis, pyelonephritis and general peritonitis with ileus	1	..	..	..	1
Carcinoma of the stomach	..	1	..	..	1
Carcinoma of the pancreas	..	1	..	..	1
Carcinoma of the rectum	..	..	1	..	1
Sarcoma of the bladder	..	..	1	..	1
Acute parenchymatous nephritis	..	1	..	..	1
Intestinal obstruction	..	1	..	..	1
Apoplexy	..	..	1	..	1
Brain tumor	..	..	1	..	1
	11	47	80	46	184

TABLE 4.—*Tumor of the Bladder: Data from January, 1915, to January, 1926*

Further Information Concerning Patients Who Died from Carcinoma of the Bladder	Grade 1	Grade 2	Grade 3	Grade 4	Total
Metastasis	1	4	10	6	21
Recurrence	2	10	12	13	37

TABLE 5.—*Tumor of the Bladder: Data from January, 1915, to January, 1926*

Metastasis	Grade 1	Grade 2	Grade 3	Grade 4	Total
Abdominal viscera	..	..	4	2	6
Pelvic bones	1	1	1	1	4
Lungs	..	1	..	1	2
Groin	..	..	1	..	1
Loin	..	..	..	1	1
Rectum and abdominal wall	..	1	..	..	1
Humerus	..	..	1	..	1
Regional and axillary lymph nodes	..	..	..	1	1
Lateral lumbar and retro-aortic lymph nodes	..	..	1	..	1
Not stated	..	1	2	..	3
Total	1	4	10	6	21

167 of the 708 cases. This study shows more clearly than any I have seen that a higher percentage of carcinomas of the bladder metastasize than we formerly realized. Twenty-one of the 166 patients who died from carcinoma of the bladder after leaving the clinic are known to have had metastasis (tables 4 and 5), and thirty-seven had local recurrences. Six patients had metastasis in the abdominal viscera, five in the pelvic and long bones, two in the lungs, and one each in the rectum, abdominal wall, distant lymph and aortic nodes. These data will tend to change our opinion with regard to the frequency of occurrence of metastasis; nevertheless, we know that cancer originating in the bladder does remain a local disease for a long time.

In comparing the statistics on various operations for carcinoma of the different regions of the body, I note

that the figures for the results do not vary much between ten and twenty years. Every study brings out the fact that in each series a few patients have been cured by the operation; yet often it is difficult to determine why these were cured while others were not. There must be great variability in the virulence of the disease just as Broders has suggested; and it is likely that in some cases a radical operation, even though performed early, would not stop the process, whereas a late operation in others less virulent might result in a cure. The medical profession is gradually learning to grade malignancy according to its activity, and it would seem that before long we shall be able to estimate the prognosis fairly well by this method. One factor that has contributed to the high percentage of recurrence in carcinoma of the bladder has been postponement of the operation until long after the onset of the disease, and another has been the attempt to cure the condition by a more conservative method, with the result that operable cases have been carried to an inoperable state. Many of our patients had been treated by fulguration and radiotherapy before operation. While this may be perfectly justifiable, nevertheless I believe that a radical operation performed early will accomplish the most. In considering the reasons for the rather unsatisfactory results of operation in cases of carcinoma of the bladder, next to the tardiness of the operation comes the fact that the operations were not radical enough. I think, with Squier and many others, that carcinoma cells many times lie at some distance from the neoplasm in the bladder wall, so that if only the tumor is removed, a few cells may be left behind. When the lesion has grown well down into the musculature of the bladder, it is likely that some of the cells have broken into the perivesical fat, so that besides excising much of the bladder wall the surgeon must remove the perivesical fat as well.

Some are inclined to think that these radical operations are not justified, and that rather than resort to them it is better to employ some palliative method. So far as the less radical procedures are concerned, I could say from my experience that fulguration and radium, either alone or combined, have given nothing more than palliation in cases of carcinoma. Thorough cauterization with the actual cautery has given good results in some of the extensive cases. Just recently we have been impressed with our results from the use of surgical diathermy in cases in which it seemed that the growth extended into the surrounding tissues too extensively to warrant trying to remove it. It seems to me that there is a great danger of using this cautery method in cases in which an operation would yield more lasting benefit.

In considering tumors of the bladder from the standpoint of treatment, they should be separated into three groups:

The first group should include cases of benign tumor. Most such tumors are papillomas and should be treated by endoscopic methods. The diagnosis should be made with certainty, for, if there is any question about the nature of the tumor, it would be better to operate.

The second group should include all malignant cases in which the process is still confined to the bladder and all cases in which the diagnosis is questionable. The treatment indicated is radical removal of the growth and reconstruction of the bladder, if that is possible. I believe that there are certain instances in which the entire bladder should be removed if there should be a reasonable prospect of eradicating the malignancy. We have performed total cystectomy many times with excellent results. In most of these cases the operation was for exstrophy of the bladder, and while the operative procedure is entirely different in these cases from that in cases of carcinoma, nevertheless the operation was usually performed on children who were none too well developed physically. The results in these cases show that the procedure is entirely practical, that function is about normal, and that often these patients live on indefinitely and entirely comfortably, and are able to carry on any ordinary occupation. Although total cystectomy with transplantation of the ureters to the rectum is not an ideal procedure, it should, nevertheless, be performed more often for carcinoma of the bladder. Drainage of the renal pelvis to protect the anastomosis of the ureter to the bowel, as recently suggested by Hinman,[11] will reduce the risk in certain cases. With more experience and development of the technic, total cystectomy can be made a reasonably safe and satisfactory operation. Too often we have tried to reconstruct the bladder after performing subtotal cystectomy, and the result was a long continued sinus infection with fatal termination, although the carcinoma did not recur. Total removal in some of the more favorable cases should bring satisfactory results.

In the third group should be placed those cases in which the malignant growth was too extensive for removal. If the lesion is confined to the bladder it can be removed by a radical operation, but if it has extended to the perivesical tissues fixing the bladder firmly to the prostate and seminal vesicles or to the other organs in the pelvis, it is not advisable to attempt to remove it. For growths too extensive for radical removal, surgical diathermy offers the best prospect. This sort of treatment should be carried out in cases in which the carcinoma of the bladder is less extensive, if there is some contraindication to the radical operation, such as cardiac or renal disease.

SUMMARY

Surgeons have been too ready to give up radical operations for malignant disease of the urinary bladder which is for a long time confined to the bladder and immediate tissues, and therefore preeminently suited to surgical treatment. Not all cases can be cured, but a higher proportion will be cured by radical surgical treatment than by any other method (table 1). Total cystectomy and implantation of the ureters into the rectum should be performed more often in cases of cancer of the bladder. Up to the present time the failures have been due to too conservative operative procedures and often to delay in operating on account of following some less radical plan first.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. CHUTE, WATERS AND JUDD

DR. BRANSFORD LEWIS, St. Louis: From the papers presented one would almost feel appalled at the difficulty and lack of promise in the situation. The statistics quoted seem to indicate that little progress has been made in the adoption of the several modern methods of attack. Nevertheless, I do not share this unhappy view. I believe that the pessimistic statistics presented of ultimate failure in so large a proportion of the cases do not give the correct impression of this situation as it stands today. In the first place, I do not believe it is a paramount necessity for us to determine which is the best of the several methods in use today. It

11. Hinman, Frank: Newer Methods for Radium Treatment of Prostatic and Vesical Cancer, J. A. M. A. 72: 1815-1816 (June) 1919.

is more sensible to use each and all of the several methods, in connection with good judgment, as bearing on their selection in each and every case. Theoretically, surgery is the ideal method of attack when one removes all the affected tissue and has a recovered patient, but there are many patients who do not present the conditions that permit this mode of attack. In many instances either local or general conditions preclude it absolutely. They are not admissible to general surgery and we must resort to some other method. Diathermy is applicable in certain cases, radium in others, and deep roentgen-ray therapy in still others, with fulguration standing in its own position of service as generally recognized by urologists at the present time. In many instances it is advisable to use diathermy, later radium, and finally deep roentgen-ray therapy, each method having its own sphere of usefulness and contributing to success. I have learned to place great faith in the efficacy of diathermy thoroughly applied (possibly repeated). I believe that radon is more efficient and superior in several respects to the application of the element itself. Acquaintance with individual cases gives an impression vastly more encouraging than the broad statistics on this subject would imply. We have eight patients with disease of such malignancy apparently recovered, all the way up to six years' standing, several of whom would have been in their graves had not various modern methods of treatment been applied. These patients could not have been saved by the older inactive measures, except possibly by the use of radical surgery, which could not have been used in certain of them. Dr. Corbus told me that he had fifty-seven cases of carcinoma of the bladder with six deaths, the recoveries having lasted up to eight years. His own preference is for diathermy, on which he seems to rely almost exclusively.

Dr. Daniel N. Eisendrath, Chicago: At the Michael Reese Hospital we have followed the pioneer work of Dr. Gustav Kolischer in the diathermy treatment of bladder tumors by the suprapubic route. We fulgurate the smaller papillomas through the operating cystoscope and seldom see a recurrence. If, however, the tumor is of medium or large size or situated at the vertex of the bladder or around the internal urethral orifice, we have obtained the best results, with both benign and malignant papillomas, by the transvesical (suprapubic) approach. Diathermy generates heat within the tissues and thus has a wider field of application than either radium or the actual cautery. Through improvements in our apparatus we obtain currents of low voltage and very high amperage. We no longer spark the surface of the tumor but begin at once with a disk electrode, so that there is no chance for implantation of detached fragments of the tumor. If the tumor involves the ureteral orifice we do not attempt to save it, preferring to reimplant after the diathermy has been completed. The whole underlying theory of diathermy is to convert all energy into caloric energy. We usually make a transverse incision with the cautery in the anterior wall of the bladder. Then, if a tumor is located on the posterior wall, and we cannot discover whether or not it involves the ureteral orifice, we use a disk electrode which will burn one half of its diameter. We begin at one edge of the tumor and gradually burn down. I wish to make clear that those who think they will accomplish anything by putting a lot of sparks on the tumor will not accomplish their purpose. They are simply insulating the tumor. What we want is to burn the tumor down to the surface, and then we have something that looks like a burn elsewhere. We have every reason to feel satisfied with this method. Dr. Kolischer has some patients who lived for more than nine years. There are some things to fear. One of them is an ascending infection if we burn too near the ureter. I have just gone through this. The patient had such severe fever and chills that we feared it would be necessary to do a nephrectomy, but it subsided. Another thing Dr. Smith told me he has seen with radium is that the ulcerations last for months and months. It seems that they will never heal, but they do heal after several months. We feel, and I think Dr. Corbus does, that diathermy applied in this way with the machines which have a high amperage and low voltage is of great value. It is no longer necessary to use the ebony instruments. What is wanted is not sparking but a genuine generation of heat in the tissues, and that is what the new diathermy machines supply.

Dr. Nelse F. Ockerblad, Kansas City, Mo.: The phase of the problem of carcinoma of the bladder which has just been so ably discussed is one of the end products of the disease. I am convinced that we should stress more the problem of early recognition. The older surgeons recognized the condition by a painless hematura, and they proved the diagnosis by opening the bladder. What we want now is more cystoscopies and earlier diagnoses. Every physician knows that these growths manifest themselves early by painless hematuria. We have often employed the cystoscope in cases in which a massive hemorrhage had occurred from a small growth. Growths early are divided into two general groups: those with small pedicles, and the broad base type. Those with pedicles do not grow so rapidly, they do not bleed so early, but those with the broad base bleed early and often cause pain at the vesical neck. If we recognize these growths early, all the difficult problems that arise from radical surgery will be greatly lessened.

Dr. James F. Percy, Los Angeles: The method that I consider the most promising in the treatment of malignant growths of the bladder has been mentioned only incidentally I refer to the excision or destruction of these growths with the cautery. Practically, there are only two gross types of malignant tumors of the bladder: the small one which is so situated as to be removed easily; the other, the extensive type such as Dr. Judd described. The first can frequently be cured through a wide suprapubic opening and the application of a low degree of heat until all the normally movable tissues fixed by the growth are made freely movable again. It is difficult for me to understand why surgeons, when they see these growths early, do not learn this simplest of all methods, in which there is no shock or mortality and rarely any subsequent morbidity. The extensive cases, which are the subject of Dr. Judd's paper, involve questions of greater moment, and with his experience, the method of removal can well be left to his judgment. But here again, after transplantation of the ureters, I know that the bladder can be resected or excised with greater certainty of a late successful result from the cautery technic than will ever be possible with a knife unfortified with heat. The hot knife, contrary to the general belief of surgeons, simplifies removal of a gross mass of cancer in or about the bladder. In the small growth, even though it surrounds the mouth of the ureter, the heat should be applied without reference to that part of the ureter. The natural tissue repair in the bladder following the application of the cautery will take care of that in a most remarkable way. If the pathologic area extends along the ureter from the bladder wall, this application of the heat inside the bladder will not prove to be sufficient and it will necessarily have to be transplanted. I did my first operation for carcinoma of the bladder with the cautery eleven years ago. This man was perfectly well until recently, when he developed the disease again and died under the care of an irregular practitioner. Early in 1918, while serving in the army, I cooked a bladder carcinoma that involved the right ureteral mouth. The mass was about 4 cm. thick and 8 cm. in diameter. This man has been perfectly well now for eight years. Both ureteral mouths, through the cystoscope, appear to be absolutely normal.

Dr. Howard L. Cecil, Dallas, Texas: I am glad to hear Dr. Judd and Dr. Chute advocate total cystectomy in cases otherwise considered inoperable. While at Johns Hopkins Hospital I looked up the necropsies in cases of carcinoma of the bladder. There were twenty-two cases, and exactly 50 per cent showed metastasis. The statistics of Drs. Judd and Chute are much more encouraging and show that total cystectomy is more frequently indicated than is done. I performed a total cystectomy in July, 1923, in a case of hematuria without other symptoms. This hematuria lasted for three or four days. It recurred in September, 1923, and lasted with varying severity till January, 1924. At this time the large mass could be felt extending from beneath the symphysis upward for 8 cm. On rectal examination the mass could easily be felt, and by bimanual palpation the tumor

was definitely movable. On cystoscopic examination nothing could be seen on account of hemorrage, but in attempting to wash the bladder free of blood I recovered a piece of tissue which the pathologist diagnosed as chronic inflammatory tissue. Feeling that such a large mass could not be accounted for by inflammatory change and never having seen a carcinoma of similar nature, I diagnosed sarcoma of the bladder. The tumor was considered inoperable and roentgenotherapy was advised. The patient was so treated. I saw him two months later (May, 1924). He was in a distressing condition, with marked frequency and strangury. The tumor was still considered inoperable, and vesical drainage was done for relief of pain. The tumor grew most rapidly and protruded through the suprapubic incision. Fulguration was tried and again roentgenotherapy, without beneficial effect. A large mass of tumor was then burned away, but before the patient was able to leave the hospital the tumor was again protruding through the wound. A total cystectomy was then done. The ureters were implanted in the skin just to the inner side of the anterior superior spine. They functioned well six hours after implantation. The patient has just returned with a local recurrence. Had his case been considered in the beginning operable from the standpoint of total cystectomy, he would probably have been cured. I believe that total cystectomy is indicated in all cases otherwise inoperable.

DR. GEORGE GILBERT SMITH, Boston: The secret of success with any of these methods is familiarity with the weapon one uses, for it makes a great deal of difference whether it is used in one way or another way. With regard to the use of diathermy, at present we are only on the threshold of knowing what can be accomplished with this method. The machines that have been made so far do not tell us the temperature of the tissue on which we are working, but I think the time will come when it will be possible to know the exact temperature of the tissue. I think, broadly speaking, that it does not make any difference by what method the carcinomatous tissue is removed. If the growth is easily accessible, surgery is the proper agent. The bladder can be sewed up and the patient will not be subjected to long sloughing. In other cases, surgical removal is very difficult, and often the patients are in danger of their life. In those cases radium or diathermy is indicated, but they must be used in the way indicated for the management of that particular tumor. The man who works on bladder tumors should be prepared with at least two of these methods. If he has diathermy he should have that apparatus ready; if he uses radium he should have that ready, and, when he opens the bladder, should do what is best. I have often been deceived by the cystoscopic appearance, and when I open the bladder do something I did not expect to do at all. The difficulty I have encountered in radium therapy is that it causes a slough which lasts a long time. This seems to me the disadvantage in the use of radium. Diathermy, in my experience, does not give so persistent an ulceration. The slough clears up within a couple of months. The difficulty is that I do not know how deeply I am burning, and I have seen a tumor recur on the very edge of the treated area. When radium seeds are put in the tissues we get not only a destruction of the mass around each seed but also the total gamma radiation, which penetrates more deeply into the tissues. On the whole, I think diathermy is a little easier for the patient to stand. Four or five years ago I became very enthusiastic about radical removal of the bladder and operated in seven or eight cases. I had only one case in which I was able to get both ureters functioning, and that man died six months later with metastasis in the spine. I became discouraged until Coffey described the new plan of putting in the rubber tubes. Since then I have operated in two cases. The first man did fairly well for a while, but finally developed a ureteral fistula and died. The other man was a patient for whom I had removed one kidney for a tumor at the ureterovesical junction. He developed another tumor on the anterior wall of the bladder three months later. I operated and, as I thought, completely destroyed that with diathermy, but within three months he developed another attack of bleeding. I looked in and found two growths. I called Dr. Chute in consultation, and he thought that the best thing was cystectomy. I implanted his solitary ureter, and from the very start he drained well, and the urine was always clear. Since then he has had a bronchopneumonia, and has come through that successfully. He has to void only once during the night, and every two or three hours during the day. He has some anal irritation. I think there is a distinct field for total cystectomy, and believe that in a certain number of selected cases we shall be able to do the operation with good results.

DR. ROBERT V. DAY, Los Angeles: I am glad Dr. Cecil suggested the desirability in certain instances of transplanting the ureters into the skin of the abdomen. I take it that urologists in general have had but meager experience with this procedure. To those who have not tried it, I would cite the following advantages over nephrostomy: First, the kidney is neither disturbed, displaced, nor injured as it must be to a certain extent by nephrostomy. The best way to care for the urinary drainage is by the employment of a soft rubber whistle tip Eynard catheter of whatever size the ureter will take—from 8 to 24 French. This avoids any possibility of cicatricial contracture on the ureteral lumen, and if the transplantation has been properly performed there is a minimum of scar tissue at the mucocutaneous suture. The patient carries a bottle into which the catheter drains. This retention catheter in the kidney pelvis or upper ureter is the most efficient method of treating preexisting pyelitis or of preventing it. The patients soon learn to care for themselves; I have one woman who has successfully managed this for seven years. It is pretty generally agreed that a ureter which is considerably dilated or draining an infected kidney above (a very common observation in carcinoma of the bladder) is not suited for transplantation into the bowel for the reason that there is pretty sure to be further injury to the kidney from ascending infection besides the fact that if the infecting organism in the kidney happens to be a urea-splitting one, there is apt to result an intolerable proctitis or colitis. I have had this happen once in a case of advanced bladder carcinoma with secondary ureteral dilatation and kidney infection in which the ureters had been transplanted into the bowel.

DR. A. J. CROWELL, Charlotte, N. C.: I commend Dr. Chute's bravery in reporting his 100 per cent fatalities in total cystectomy. We usually report our successes and forget our failures. We are not so impressed with reports of our successes as we are by that of our failures. I have tried fulguration, radium, excision and cauterization in the treatment of malignant growths of the bladder, with apparent success in some cases and miserable failures in others. I recall a patient who had had a bladder resection for a malignant growth five and one-half years ago. Eighteen months ago Dr. Braasch destroyed a papillary carcinoma in his bladder by fulguration. I examined the patient the day before I left home and I defy any one to find any signs of a malignant growth in his bladder now. That man had had excision, with recurrence, and a simple fulguration has apparently cured him. I have had some brilliant results in cases in which I have used radium, and in others I have had complete failures.

DR. T. LEON HOWARD, Denver: I have had the same results with the treatments and operations we have just heard described, and we are going to continue having them until we get this class of patients earlier in their disease. I think we are partially responsible for not getting these patients earlier. I dare say that if Dr. Judd had seen his patients when they first showed bloody urine, his statistics, as well as those of the rest of us, would be quite different. We can perform any class of operations and have failures up to 100 per cent when we are seeing these patients after they have been bleeding for two or three years. A few days ago I examined a man who had been passing bloody urine for eight years, all the time being assured by his family physician that the prescription he was giving him would cause the condition. Cystoscopy revealed the entire bladder filled with a papillomatous mass. We would not be reporting these large mortality rates if we, as urologists, would emphasize each time we talked before a medical society, no matter

on what subject, that hematuria means something, and so get the general practitioner, who is the first to see these cases, to realize the seriousness of hematuria and send the patients in for an early diagnosis.

DR. P. E. MCCOWN, Indianapolis: I have been doing what Dr. Howard has just mentioned. In two cases, when I operated, I found much more extensive tumors than the cystoscope led me to expect. I think Dr. Chute brought out that the growth will often spread back of the mucous membrane and we cannot see how extensive it is with the cystoscope. In both these instances I had intended to fulgurate the bladder, and had radium ready, but I found mestastases. The first bleeding had occurred a year before. The glands were involved as far up the spine as I could reach through the small peritoneal opening. In the infiltrating type of case we should open the bladder rather than attempt the insertion of radium through the cystoscope. The first patient had an ulcer the size of a small fingernail as seen through the cystoscope, but when I opened through the peritoneum I found a mass which was projecting backward in contact with the sacral promontory. I cannot believe that diathermy would do much good in that case. The man went bad on the table and finally died of what we called an embolus. The second case showed a mass by the cystoscope about the size of a 25 cent piece on the right bladder wall about three-fourths inch above the right ureter orifice. The remainder of the bladder mucosa was perfectly normal, there being no cystitis. There was at least three-fourths inch of clear mucous membrane between the mass and the bladder neck. On separating the rectus muscle at operation, we found an entirely different picture of the right side. All of the bladder to the vertex and half of the posterior wall was a carcinomatous mass. The mass around the base extended from the prostate on the right to and in contact with the left ureter. There was nothing in the appearance of the mucous membrane to indicate the extent of this growth. The other two cases of infiltrating type of carcinoma of the bladder that I have seen since January first with symptoms of three years' duration and another of eighteen months' duration were in such a bad condition that no therapeutic measures were attempted. A fifth patient, with a capillary carcinoma of the bladder with intermittent hematuria of six years' duration, has made a good recovery from cystotomy, the removal of two large papillomas by tonsil snare and the implantation of radium in the base of the tumors. This was done in January, 1926, and recent cystoscopy shows the bladder clear. From the standpoint of duration of symptoms, prognosis and treatment, I believe we should separate the infiltrating type of bladder carcinoma from the papillary type of carcinoma of the bladder, for to me they are almost two distinct entities.

DR. ARTHUR L. CHUTE, Boston: I do not believe that fulguration will be anything more than palliative in cases of infiltrating growths of the bladder; it will not remedy the condition that is killing many of these people; that is, the blocking of the ureters. In many of these patients in which the evident growth is some distance away, the process extends down to the region of the trigon. By inference, Dr. Lewis suggested that perhaps we went ahead on those patients before they were really in good shape. I do not think we did. The patients were given a certain preliminary treatment, but we cannot wait in cases of this type as we can in the case of a benign prostate. In answer to Dr. Eisendrath's question, I believe putting a tube in the ureter high up and bringing it out the loin would be more likely to cause a strictured condition of the ureter than a nephrostomy. In a condition of that sort I expect to get real strictures of the ureters. I do not know that I quite understand Dr. Percy's method of treatment. I have used heavy cauterization on a number of occasions and can remember one or two patients who died of embolus shortly afterward; I thought the cauterization was the probable cause. I have thought we were peculiarly likely to get thrombi by that method. Dr. Smith mentioned one of the patients that I also saw. I wish to add to what Dr. Smith has said that I saw this patient within a few days and he said he was still feeling fine; he certainly looked it.

AIR EMBOLISM COMPLICATING THORACIC SURGERY

REPORT OF TEN CASES *

GEORGE W. REYER, M.D.
Captain, M. C., U. S. Army
AND
HAROLD W. KOHL, M.D.
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In 1864, twenty-six years prior to the time when Forlanini in 1890 advocated artificial pneumothorax as a therapeutic measure in treatment of phthisis, Rogers reported a case in which he observed a condition of pallor, unconsciousness and clonic convulsions, with recovery after twenty-four hours, while irrigating an empyema cavity in a young girl. This probably, as we believe today, was a case of mild cerebral air embolism, although Rogers diagnosed it at that time as pleural eclampsia or pleural epilepsy. Since 1890, many thousands of interpleural insufflations have been accomplished, and many unsuccessful attempts at the procedure have been made. We have come to learn that the operation has enough of real danger connected with it to cause the operator to be on the watch for the appearance of any complication that may arise. Among such complications may be mentioned air embolism, so-called pleural shock, emphysema, pneumoperitoneum, pulmonary hemorrhage, spontaneous pneumothorax and pleural effusions. Probably of these complications, air embolism is the most alarming and the most to be dreaded. We believe that cases diagnosed as pleural shock are in reality only mild cases of cerebral air embolism. One who has experienced such a complication, especially air embolism, naturally becomes more interested; and turning to the accumulated literature for data on the subject, is immediately impressed by the lack of case reports on the subject, especially in the English language.

Probably more valuable information is to be obtained from German authorities than elsewhere, in whose reports there are included seventy cases of cerebral air embolism with sixteen fatalities. At Fitzsimons Army General Hospital in a series of many thousand interpleural air insufflations, during the course of about four years, there have occurred ten instances of cerebral air embolism with five fatalities and five recoveries.

We concur in the opinion of Brauer and others that air embolism as a complication of thoracic surgery is a much more common occurrence than was formerly taught. This is probably due to the fact that when not of a fatal termination it is either overlooked or diagnosed as pleural shock, or that cases of this nature have not been reported in the literature.

Many physicians still diagnose cases in which the patients present the symptom complex of pallor, tonic and clonic convulsions, temporary blindness and coma, and yet go on to complete recovery, as pleural shock. We believe that these cases should all be classed in the category of cerebral air embolism. This belief is substantiated by experiments by Schlaepfer,[1] together with Clairmont of Zurich and Halstead of John Hopkins. Schlaepfer carried out a series of experiments

* From the Medical Service, Fitzsimons General Hospital.
* Read before the Denver Sanitarium Association, April 27, 1926.

1. Schlaepfer, K.: Air Embolism Following Various Diagnostic or Therapeutic Procedures in Diseases of the Pleura and the Lung, Bull. Johns Hopkins Hosp. 33: 321 (Oct.) 1922.

on normal pleura of various animals. He found that by stimulation of normal pleura by mechanical, chemical, electrical and other stimuli, he did not observe a constant specific reaction, by way of the central nervous system, as one should expect if the so-called pleural reflexes were the real source of the complication.

That air or other substances may enter the pulmonary venules and efferent capillaries without being injected is well substantiated in a case reported by Brandes. He was attempting to outline an empyema cavity with bismuth paste. The greater part of the paste escaped around the catheter into the sinus tract, and the patient had a spasm with deviation of the eyes, and died after twenty hours. Necropsy revealed bismuth in the small vessels of the cerebral cortex of both hemispheres. On examination of serial sections of the walls of the sinus, bismuth was traced to the pulmonary capillaries and veins. The catheter had evidently injured the granulation tissue along the tract and allowed bismuth to enter some underlying venules, to be thus transported to the vessels of the cerebral cortex by way of the left heart.

Numerous experiments have been carried out by various research men to determine the effect of air bubbles injected into peripheral vessels. It has been demonstrated repeatedly that large quantities of air, if injected slowly into such a vein, cause no demonstrable untoward effects; but if large quantities are injected rapidly, symptoms of air embolus, mild or severe, may become evident. This is explained by the fact that the air is carried to the right heart, and becomes diffused in the peripheral lung capillaries and in this manner absorbed, before reaching the systemic circulation. One may, however, find a slow injection of air or injection of a minimal amount of air into a peripheral vein to cause marked symptoms of shock such as are encountered when air is directly injected into such a vessel as the carotid artery. This may be explained either by a condition of patent foramen ovale (present according to some statisticians in from 19 to 40 per cent of individuals) thus establishing a direct path for the air to enter the systemic circulation before being filtered out and absorbed in the vascular lung tissue; or it may, in some cases, be caused by air passing through the pulmonary vessels and capillaries into the systemic circulation without being completely absorbed. This undoubtedly occurs when large quantities of air are rapidly injected into a peripheral vein.

Wever [2] has demonstrated by numerous experiments on rabbits, dogs and cats the effects of introducing air directly into the carotid arteries and has found that the symptom complex coincides with that sometimes encountered in inducing artificial pneumothorax. Depending on the amount of air introduced, he observed variations from mild tremors, or mild disturbances of cardiac and respiratory action, to sudden death—the milder effects resembling what has been often termed, we believe incorrectly, pleural shock.

Wever, also a follower of Brauer in the opinion that cases reported as pleural shock are in reality due to air embolism, has borne out his belief by a series of experiments on various animals. He introduced air by means of a cannula directly into the carotid arteries, and was able in all cases to produce a symptom complex similar to that seen, comparatively frequently, in operations on the chest. Becker and Stargard were able to demonstrate, during the course of these experiments, air bubbles in the central retinal vessels on ophthalmoscopic examination; and without exception gas particles were observed in the vessels in the white matter of the brain at necropsy.

Kowitz [3] states that it is often impossible to obtain pathologic anatomic proof in fatal cases of air embolus, because of the fact that minimal air bubbles introduced into the carotid arteries often cause death.

As a rule, it has been the experience of all physicians who have had reason to give intravenous injections that often small quantities of air are at the same time introduced into peripheral veins with no untoward effects, doubtless because the amount of air has been small and the entrance has been slow, thus allowing absorption in the vascular lung tissue. But in operations on the neck, and in manual loosening of placenta praevia, we have known of immediate death resulting from air embolus. However, in such cases as these, the quantity of air has probably been large and the entrance into the circulation rapid.

How does air enter into the systemic circulation during the operative procedure of artificial pneumothorax? Occasionally at necropsy a case is found in which there is a dilatation of a pleural vein which, along an adhesion, anastomoses directly with a branch of the pulmonary vein. Since it is not possible to see such an underlying structure, a needle might easily transfix such a vein. It is not necessary to introduce air from the pneumothorax apparatus in such an instance, for the negative pressure created by the flow of blood would suck air in from the outside before the needle is withdrawn, and from the pleural cavity after withdrawal. The danger of puncturing such a vessel is lessened, but not entirely done away with, by the use of a large blunt needle. The needle might also puncture the lung tissue and open up a communication with air in the needle or pulmonary air spaces, bronchi or alveoli.

The needle may also, as well described by various German authorities, enter a consolidated area of lung tissue. In such an area the walls of the veins are splinted, so to speak, by the dense surrounding structures, and the entrance of the needle thus facilitated, and the collapse of the vein prevented; thus leaving a gaping hole in the vein which allows free entrance of air directly into a pulmonary vein.

In the procedure of collapsing a lung with artificial pneumothorax, one frequently encounters instances in which some pleural adhesions fail to peel away from the parietal pleura, thus giving rise to strands of pleural adhesions, often vascular, into which a needle might be introduced in the process of refilling; thus, in another manner, allowing air to enter the pulmonary venous network.

As mentioned before, it is conceivable that a pleural vein with no anastomosing branches with the pulmonary veins or capillaries might be punctured, and air might enter and be conducted to the right heart, and yet find its way into the left heart by way of a patent foramen ovale.

Another condition, rarely encountered, is one in which air may enter the terminal coronary vessels producing cardiac failure, or cardiac failure may result from circulatory disturbances around the floor of the fourth ventricle. Such an occurrence presents a dramatic situation and demands immediate heroic measures, which will be mentioned later under treatment.

2. Wever, E.: Cerebrale Luftembolie, Beitr. z. Klin. d. Tuberk. **31**: 159, 1914.

3. Kowitz: Luftembolie oder Pleuraschock, Beitr. z. Klin. d. Tuberk. **50**: 374, 1922.

REPORT OF CASES

Following are the reports of the ten cases observed at Fitzsimons General Hospital:

CASE 1.—G. C., a man, aged 30, Lieutenant, U. S. Navy, manifested in August, 1924, the first definite symptoms of pulmonary tuberculosis. He was sent to the hospital in October, 1924, where the diagnosis was: tuberculosis, pulmonary, chronic, active in all lobes of both lungs. There was caseous bronchopneumonia in the left lung, with a large multiple cavitation in the midportion of the lung. The patient became progressively worse under general treatment, and, May 10, 1925, it was decided to attempt to collapse the left lung with artificial pneumothorax as a last resort. Artificial pneumothorax was induced on that date with the Robinson apparatus; 200 cc. of air was introduced, and the final reading was minus 2 minus 1. At the time of the first puncture, the patient went into a condition of syncope, but he immediately recovered on inhalation of aromatic spirit of ammonia. May 11, the first refill was given, 200 cc., with a final manometer reading of minus 1.5 minus 0.5. May 14, another refill of 325 cc. was given; the final reading was minus 0.75 minus 0. June 2, preparation was made for a refill. A small needle used in previous punctures was inserted in the fifth intercostal space in the anterior axillary line. An ethyl chloride spray was used. The manometer showed oscillations synchronous with the cardiac impulse. The operator thought he was in a pleural adhesion and withdrew the needle. Before another puncture could be made, the patient became unconscious, cyanosed and pulseless. There was a conjugate deviation of the eyes to the left. There were no apparent convulsive movements. Respiration continued for a few minutes. The patient's head was lower than the body throughout operation, so no change of position was made. Cardiac stimulants were given. Death occurred about fifteen minutes after loss of consciousness. As soon as possible after death, about fifteen minutes, the eyegrounds were examined, and definite transparent streaks alternating with the dark blood columns were seen in the lumina of the central retinal vessels.

At necropsy the upper lobe of the left lung was completely consolidated except for a cavity just under the pleura on the lateral surface. The lower lobe was congested. There was no gross sign of puncture on the external surface.

The dura was carefully removed and the superficial veins were examined, many of which showed definite air bubbles within their lumina.

CASE 2.—H. T., a man, aged 34, was admitted with a diagnosis of pulmonary carcinoma, massive tumor in the left lung and metastases in the right. Growths in the right lung had the appearance, in a roentgenogram, of cysts. The largest growth of this nature was located superficially and posteriorly in the upper part of the lower lobe. The patient was taken to the operating room about 11 a. m. and was placed in a sitting position across the operating table. The operator, at the request of the chief of the medical service, inserted a rather large caliber needle through the chest wall into the tissue for diagnostic purposes. As the needle entered the growth, the patient had a paroxysm of coughing and raised some blood. The needle was immediately withdrawn, and the patient went into tonic and clonic convulsions, becoming cyanotic and pulseless, and breaking out into a profuse perspiration. Artificial respiration and heart stimulants were given, and the patient was removed to the ward unconscious. He remained unconscious with occasional convulsions until his death, fifteen hours later. Physical examination revealed a partial spontaneous pneumothorax, but the death was believed to be due to cerebral air embolism.

CASE 3.—C. L., a man, aged 29, was admitted, Dec. 5, 1922, with a diagnosis of tuberculosis, pulmonary, chronic, active in both lobes of the left lung, and in the upper and middle lobes of the right lung, with a 6 cm. cavitation in the left upper lobe, and pneumothorax, induced, in the left lung. Pneumothorax had been induced at a hospital in Colorado Springs sometime in 1920, and the patient had had refills every three weeks since that time prior to his admission to the Fitzsimons General Hospital. Such procedure was continued at this hospital until it was seen to be of no avail in collapsing the cavity in the left lung, and thoracoplasty was advised. The patient was prepared for operation on the morning of April 2, 1923. An injection of 0.2 per cent procaine hydrochloride was made along the line of the proposed incision between the vertebral border of the scapula and the spine on the left side. In all, about 15 cc. of procaine hydrochloride solution was used to cover this tract. Then four long, thin needles were introduced at the levels of the fifth, sixth, seventh and eighth dorsal spinal for the purpose of inducing deep perivertebral conduction anesthesia. After the injection of the last needle, the patient coughed, complained of severe pain, and became unconscious. There were no tonic or clonic convulsions. The pupils were fixed, and moderately dilated. The patient became cyanotic; the pulse became feeble and the respirations shallow. The needles were withdrawn, the head of the table lowered, and artificial respiration instituted. Camphor and oil was administered by hypodermic. No improvement was noted, and 10 minims (0.6 cc.) of 1:1,000 solution of epinephrine hydrochloride was injected directly into the heart muscle. All efforts were without avail, and the patient died a few minutes later. It is to be noted that for about three years previous to this procedure, the patient had been receiving refills of air in artificial pneumothorax, and procaine hydrochloride had been used in each instance for anesthesia, without any untoward effects.

CASE 4.—A. H., a man, aged 30, was admitted to the hospital, Sept. 2, 1923, with a diagnosis of tuberculosis, pulmonary, chronic, active in the upper lobes of both lungs, and with a 3 cm. cavitation in the lower portion of the left upper lobe. After several months of hygienic treatment, artificial pneumothorax was recommended for the collapse of the cavity in the lower portion of the left upper lobe. Nov. 25, 1924, pneumothorax was attempted. No air could be introduced because of adhesions. The patient complained of being nauseated and became very pale. The hands and feet became cold. The patient attempted to rise from the table and became suddenly rigid, with tonic and clonic convulsions and loss of consciousness. For about half an hour, there were a spastic paralysis of the left side of the body, dilated pupils, Cheyne-Stokes respiration, and a rapid but full pulse. The patient remained unconscious, became delirious and exhibited photophobia. Death resulted after about eighteen hours.

CASE 5.—H. G., a man, aged 51, was admitted with a diagnosis of tuberculosis, pulmonary, chronic, active in both lobes of the left lung and in the upper lobe of the right lung, with multiple cavitation of the left upper lobe. Artificial pneumothorax was induced, Nov. 30, 1923, for collapse of the left lung. Because of extensive adhesions it was difficult to find an air space, but finally 200 cc. of air was introduced. Refills were continued until Jan. 4, 1924. On that date, another attempt at refilling was made, but the manometer readings were unsatisfactory. However, it was decided to attempt to introduce a small amount of air in an effort to peel away the adhesions; 100 cc. of air was introduced, therefore, under some increase of pressure.

The patient complained of severe pain at the site of the puncture; a manometer reading taken after the 100 cc. had been introduced showed a decidedly positive pressure with practically no oscillation. The needle was withdrawn, and the puncture closed with collodion. The patient then rose to a sitting position, whereupon he collapsed, became totally unconscious, and exhibited tonic spasms of the muscles of the right side of the face, extensors of the back and lower extremities, and tonic spasm of the diaphragm and abdominal muscles. His head was immediately lowered, artificial respiration was instituted, and atropine sulphate was administered hypodermically. Other symptoms and signs manifest were: extreme cyanosis, conjugate deviation of the pupils to the right, rapid pulse, and rapid, stertorous respiration. Ophthalmoscopic examination was made two hours later with negative results. The patient remained in deep coma, and for about twelve

hours tonic and clonic convulsions appeared about every half hour. They then became more frequent, the pulse became weak and very rapid, and the blood pressure became very low. Death ensued about twenty-eight hours following the operation.

The brain was examined at necropsy about two hours later. The external vessels of the dura were almost bloodless. There was fairly well marked edema of the whole surface of the brain. On the left side the vessels were full of blood. On the right side, the vessels were filled with air bubbles. The external vessels of the medulla and the base of the brain were engorged with blood. Sections of the brain failed to show anything except vascular congestion. There were no hemorrhages present.

CASE 6.—R. E., a man, aged 29, was admitted to the hospital, March 17, 1925, with a diagnosis of tuberculosis, pulmonary, chronic, active in all lobes of both lungs, with a 3 cm. cavity in the right upper lobe. Artificial pneumothorax for the collapse of the cavity in the upper lobe of the right lung was advised, and induced, May 4. A partial collapse was obtained. June 12, a needle was inserted for a refill. The patient complained of pain in the shoulder, and nausea, and attempted to rise from the table. He immediately complained of blurred vision and exhibited symptoms of shock as follows: cyanosis, shallow respirations and feeble pulse. Mild tremors of the extremities were also noted. The patient became totally blind in a few seconds. The foot of the bed was elevated to an angle of about 30 degrees, and epinephrine and strychnine were administered by hypodermic. After about three hours, the patient regained his vision and all symptoms disappeared. Ophthalmoscopic examination was made without mydriasis, but nothing could be distinctly seen. Later, the pupils were dilated, but no air bubbles were seen in the retinal vessels.

CASE 7.—F. K., a man, aged 38, was admitted to the hospital, Jan. 5, 1926, with a diagnosis of tuberculosis, pulmonary, chronic, active in both lobes of the left lung, and in the upper lobe of the right lung, with a multiple 3 cm. to 5 cm. cavitation in the left lung. It was decided to collapse the left lung by artificial pneumothorax, and the procedure was begun, January 19. A small amount of air was introduced, but because of extensive adhesions the manometer readings were always positive. In order to peel away the adhesions, refills were given under pressure. February 23, while air was being introduced, the patient complained of severe pain, and suddenly became unconscious and cyanotic. Tonic and clonic convulsive seizures ensued; the respirations became shallow, and the pulse weak. The foot of the bed was immediately elevated to an angle of about 45 degrees, and strychnine was administered by hypodermic. Complete recovery followed after about fifteen minutes, and the only after-effects were severe headache and extreme nervousness.

CASE 8.—J. B., a man, aged 29, was admitted with a diagnosis of: tuberculosis pulmonary, chronic, active in all the lobes of the right lung and in the upper lobe of the left lung, with cavitation in the right upper lobe; scattered pleuritic adhesions over the entire right lung; pleuropericardial adhesions in the left lung. Pneumothorax was induced for the collapse of cavitation in the right lung, Sept. 3, 1923. Refills were continued until May, 1924, when the patient left the hospital for thirty days. On his return, a refill was given with some difficulty. When the patient attempted to rise from the table, he complained of pain in the right chest, frontal headache, nausea and vomiting, and dyspnea, and he became unconscious. He was removed to a bed, where he had tonic and clonic convulsions involving chiefly the left side of the body. He gradually regained consciousness, and after about twenty-four hours was entirely normal except for a motor paralysis of the left hand, with a marked loss of strength in that member. This condition gradually subsided, and at the end of ten days had entirely disappeared. The eyegrounds were not examined.

CASE 9.—W. W., a man, aged 32, was admitted, Oct. 6, 1923, with a diagnosis of: tuberculosis, pulmonary, chronic, active in all lobes of both lungs, with multiple cavitation in the right upper lobe, and a large 5 cm. cavity in the upper portion of the right lower lobe; pleuritic adhesions of the right upper lobe. This was considered a terminal case, and pneumothorax for the collapse of the right lung, as a last resort, was begun, October 16. Refills were given without difficulty, and the patient showed some improvement. November 22, a refill of 500 cc. of air was given. During this procedure, the patient said he experienced more pain than usual. As he attempted to rise from the table he complained of dizziness and blurred vision, became nauseated and vomited. The blurred vision persisted for about three days and no ill effects following that time were noted. The eyegrounds were not examined.

CASE 10.—O. S., a man, aged 36, was admitted to the hospital, Aug. 4, 1923, with a diagnosis of tuberculosis, pulmonary, chronic, active in all lobes of the right lung and in the upper lobe of the left lung, with a large cavitation in the right upper lobe. December 18, pneumothorax was advised for the collapse of the cavity in the right lung, and was induced on that date. Weekly refills were given, but because of extensive adhesions, the compression was poor. Jan. 18, 1924, during an attempted refill, the manometer reading was 0 minus 1. The patient complained of severe pain at the site of the operation, and vertigo. On attempting to rise from the table, his vision became blurred, and continued for a period of about thirty minutes, with complete recovery at the end of that time. The eyeground examination showed nothing pathologic.

COMMENT

A summary of these cases reveals that:

1. In seven of the ten cases (or 70 per cent) the patients were either in the sitting position or were attempting to arise from the table when the symptoms of air embolism became manifest.

2. In 40 per cent, symptoms appeared without actual introduction of air.

3. In four cases, nausea was the initial symptom.

4. In seven cases, the patients complained of very severe pain at the site of the operation.

5. In six cases, tonic and clonic convulsions were a prominent feature.

6. In six cases, there were mild to severe visual disturbances.

7. Six of the patients became totally unconscious.

8. Nine of the ten cases showed evidence of pleural adhesions in the roentgenogram.

It is of especial importance to note that all but three of our patients were in a position in which the head was higher than the body when the onset of the symptoms and signs occurred.

TREATMENT

The treatment of cerebral air embolism complicating thoracic surgery may be divided into prophylactic and therapeutic.

In prophylaxis we must consider the peculiar aspects of each individual case. Thorough study by roentgen-ray and fluoroscopic examinations, with especial note of areas of consolidation, adhesions, and cavitation near the periphery of the lung, will serve to guide the operator away from the dangerous areas of the lung. It has been our custom of late to examine each chest with the fluoroscope before refilling in order to ascertain the location of adhesions. When the adhesions are extensive a cross is made with a skin pencil where, according to fluoroscopic observations, it seems safest to insert the needle.

The size of the needle is also an important factor. The Floyd Robinson needle is an excellent choice for the initial fill of artificial pneumothorax. A large caliber needle (about no. 17 gage) with the point

ground blunt should always be used in refilling a chest, especially when there are adhesions or only partial collapse. It is apparent that a large caliber needle with a blunt point will have a tendency to push aside structures, especially blood vessels, whereas a sharp pointed, small needle will more easily transfix them. It must be remembered that mere piercing of a vessel without introduction of air in a case of pneumothorax is enough to cause cerebral air embolism by the sucking of air from the pneumothorax already present. Therefore the use of a small caliber needle is condemned.

In initial fills, free negative oscillations of the manometer should be obtained before insufflation of air, to establish the certainty that the point of the needle is neither in an adhesion nor buried in the lung tissue. It may also be advisable in some cases to insert an obturator through the needle, and withdraw and wipe it with gauze, to determine whether a vessel has been injured during the puncture.

In cases in which the patient complains of severe pain, vertigo, blurring of vision or any of the other symptoms of cerebral air embolism, the needle should be immediately withdrawn and proper therapeutic procedures instituted.

In cases with adhesions or cases with partial collapse, if during the refill the probability of pricking an adhesion, entering a vein, or puncturing the lung exists, or if the manometer readings, other circumstances and symptoms would indicate that such an accident has occurred, the patient should not be allowed to elevate the head for ten minutes or even longer after the needle has been withdrawn; for in 70 per cent of our cases symptoms of cerebral air embolism appeared just as the patients were attempting to get up from the table immediately following withdrawal of the needle, or were already in the sitting position.

In spite of all these precautions, it is not always possible to avoid the accident of cerebral air embolism.

When such a condition has developed, immediate therapeutic measures must be instituted; for the quicker the air bubbles are dislodged from the cerebral circulation, the less chance is there for focal degenerative processes in the brain and the more chance the patient has for recovery.

The head of the patient should be at once lowered to an angle of about 30 degrees with the horizontal, in order to engorge the vessels of the brain in an attempt to cause the air bubbles to seek the uppermost portion of the circulatory system, and thus float out of the cerebral vessels. In order to aid the circulation in dislodging the air bubbles, circulatory stimulants, such as epinephrine and strychnine, have been found to be of value. In cases of respiratory failure, it may be necessary to resort to artificial respiration. The patient being in a condition of shock, it is well to apply heat to the extremities. The head of the bed should be kept lowered for about half an hour after the effects of the air embolus have passed off.

In a case of coronary air embolism, or in one of cardiac failure resulting from circulatory disturbances in the vital centers around the floor of the fourth ventricle, it may be necessary to resort to such measures as stimulation of the heart beat by pounding over the heart, injecting epinephrine directly into the heart muscle, or direct massage of the heart.

SUMMARY

1. Cases of air embolism are more frequent than one would be led to suspect by reviewing the literature; and we believe that those cases reported as pleural shock are in reality mild cases of cerebral air embolus.

2. Cerebral air embolism may result from injecting air into the pulmonary veins or dilated veins in the parietal pleura, adhesions or chest wall. In the latter, the air reaches the pulmonary veins by the venous anastomosis along adhesions.

3. This accident may occur also without actually introducing air, the air being aspirated into the vein from the needle and connecting tube, from the pleural cavity, or from the air spaces in the lung, or by direct passage from the left to the right heart by way of a patent foramen ovale.

4. The symptoms and signs of cerebral air embolism are:

(*a*) Nausea.
(*b*) Pallor.
(*c*) Pain at site of operation.
(*d*) Tonic and clonic convulsions.
(*e*) Visual disturbances.
(*f*) Coma.
(*g*) Passing manic-depressive manifestations.
(*h*) Retrograde amnesia.
(*i*) Visible air bubbles in central retinal vessels on ophthalmoscopic examination.
(*j*) Mottling of the skin.

5. It is important to keep the head of the patient lowered for at least ten minutes following the withdrawal of the needle, if symptoms or circumstances indicate the possibility of the occurrence of an air embolism.

6. Prophylaxis consists of:

(*a*) Careful study of case by roentgen ray and fluoroscope before operation.
(*b*) Use of large caliber needle with blunt point.
(*c*) Free and negative manometer oscillations before introduction of air.
(*d*) Removal of needle as soon as patient shows any signs or symptoms of air embolism.
(*e*) Keeping patient in prone position for at least ten minutes after withdrawal of needle, if study of the case reveals possibility of the occurrence of an air embolism.

7. In treatment, one should:

(*a*) Lower the head immediately.
(*b*) Administer epinephrine or strychnine.
(*c*) Keep the head of the bed lowered for about half an hour after symptoms of air embolism have disappeared.
(*d*) Employ artificial respiration.
(*e*) In cases of coronary air embolism, or of cardiac failure, inject epinephrine directly into the heart, and massage the heart muscle directly or indirectly.

The School Clinic.—The future and continued success of the school clinic and other public medical services necessarily depends on the attitude of the medical profession, and this in its turn is affected by the training of the medical student, the capacity and resource of the medical practitioner, and the opportunity for the medical practitioner to make his contribution to the public medical services either as a part-time or whole-time officer. There is some misapprehension in the criticism occasionally made that the government desires to have a state medical service in which all medical practitioners shall be enrolled. There is, of course, already a state medical service. . . . It is essential that private practitioners should take their full share in the work of the school clinics, so that they may have more opportunities for detecting the early signs of disease, to become active agents in the prevention of disease, and workers for the collective rather than only for the individual good.—Rolleston, Humphry: *Lancet*, Oct. 2, 1926.

RECONSTRUCTION OPERATION ON THE HIP*

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As the operative reconstruction of the hip joint has been developed, its use has broadened to include so many clinical conditions that it is manifestly impossible to cover all of the subjects in a paper of this type. Consequently, only the following conditions, which seem to be the most interesting and which perhaps have the broadest field of application, will be discussed:

1. Congenital dislocation of the hip which cannot be reduced or cannot be held within the acetabulum after reduction.
2. Paralytic dislocations in connection with poliomyelitis which completely dislocate or partially subluxate, giving an unstable hip.
3. Ununited fractures of the neck of the femur after the possibility of bony union has passed.

Much interesting work is being done in connection with other conditions, such as the painful hips in hypertrophic arthritis, unreduced traumatic dislocations and the pathologic dislocations associated with destructive lesions of the hip joint.

Arthroplasties of the hip, bone grafts for the induction of union in ununited fractures of the hip, and those procedures whose object is a fusion or arthrodesis of the hip are not included in this paper.

A reconstruction operation in the three conditions chosen should have for its object: first, restoration of stability, and, second, preservation of motion.

Restoration of stability implies that the hip will support the weight of the body sufficiently well to permit a reasonabe amount of walking without pain.

Retention of motion means that there shall be enough painless motion in the joint to maintain the normal position, and to permit the ordinary movements of walking and sitting.

RECONSTRUCTION OPERATIONS IN CONGENITAL DISLOCATIONS

The whole treatment of congenital dislocations of the hip is a problem that is far from solved. None of the routine procedures now employed are satisfactory and the difficulties of correction and the percentage of poor results increase with the age of the patient. Granted that an open reduction has been decided on, we are faced with the possibilities as to just what the operative procedure will be.

The age of the patient, and the position of the head of the femur and the condition of the acetabulum determine, to a certain extent, the general operative plan, but each case is a problem unto itself, and the original plan must often be changed to suit unexpected difficulties that may arise.

We have learned much from closed reductions that is of help in open reconstructions. In congenital dislocations the head of the femur is extremely intolerant to weight bearing, particularly under tension, or after being traumatized by forcible reduction. Fragmentation, distortion and atrophy of the head, due probably to epiphyseal disturbance, usually follows. This may occur in heads that have been traumatized by attempts at reduction but have never been within the acetabulum, or it may follow extremely easy open reductions when the head has been placed in the socket without tension or trauma. Similar changes occur when a new acetabulum is formed higher on the ilium; hence in a large percentage of the cases we can expect some distortion of the head regardless of what procedure is employed. Fortunately, we have also learned that, in spite of quite extensive changes in the head as seen in roentgenograms, if there is sufficient bony support to prevent upward excursion of the head and strain on the soft tissues, good function will result.

INDICATIONS FOR RECONSTRUCTION IN CONGENITAL DISLOCATIONS

1. In young children, when the position cannot be retained after closed reduction. Hips that have been successfully reduced often gradually begin to slide up over the rim of the shallow acetabulum after the cast has been removed and the thigh brought down from the position of extreme abduction. This can be prevented by deepening the upper rim of the acetabulum with the bone turned down from the lateral surface of the ilium.
2. In older children, when reduction cannot be accomplished by either the open or the closed method. Here a new acetabulum has to be formed at a higher level on the ilium.
3. In adults suffering from pain and instability because of weight bearing on the soft tissues. A ledge of bone may be turned over the head, or the false acetabulum, if present, deepened by bone from the ilium.

DESCRIPTION OF OPERATIVE PROCEDURES

All operations for congenital dislocations of the hip are preferably done through the Sprengel or Smith-Peterson incision, as it gives a complete exposure of the region of the acetabulum and also the lateral surface of the ilium, allowing a modification of the operation to suit the conditions encountered.

Reduction into the True Acetabulum with Deepening of the Upper Rim by Bone Chips from the Lateral Surface of the Ilium.—After thorough exposure of the area has been obtained through the foregoing incision, the thickened capsule over the head of the femur is incised, the hour glass constricture of the capsule usually found between the head and acetabulum divided in both directions, and the ligamentum teres traced downward into the acetabulum. If the ligamentum teres is thickened and elongated, it had better be excised. All scar and fibrous tissue is cleaned out of the acetabulum, and the head of the femur is reduced. Starting about 1½ inches above the acetabulum on the lateral surface of the ilium, good, broad bone shavings are turned down over the upper rim, projecting outward over the head of the femur. The angle between these shavings and the ilium is filled in by further bone chips. The wound is closed in the usual manner and a plaster cast applied from the toes to the chest with the leg abducted to about 30 degrees. Often during the operation it will be seen that changes in the shape and position of the neck make a certain amount of internal rotation necessary to maintain reduction. This can be corrected by an osteotomy just above the knee at a later date.

Formation of a New Acetabulum When Head Cannot be Reduced.—The same operative exposure as described above is employed except that the capsule and muscular attachments around the base of the neck and trochanter

* Read before the Section on Orthopedic Surgery at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

are dissected free to allow the head to descend to as low a level as possible. In choosing the location for the new acetabulum, several important considerations should be kept in mind:

1. It should be as far forward as the old socket, or a tilting of the pelvis will occur, resulting in an increased lumbar lordosis.

2. While we wish to overcome as much shortening as possible, it is better to make the new acetabulum at a high enough level to permit a reduction of the head without trauma or excessive tension. If this principle is not observed, marked degenerative changes in the head will occur, resulting in adhesions and troublesome limitation of motion.

3. The acetabulum should not be dug out too deeply in the ilium, or similar changes in the head, loss of motion and an adduction deformity will result. Stability should be insured by turning bone fragments down over the new joint from the ilium.

A safe method for determining the level is to abduct the thigh, flex it to about 60 degrees, and take the place on the ilium at which the head of the femur rests. With a curved osteotome a cavity is dug out about one-half inch deep and large enough to accommodate the head easily. No lining for the joint is necessary. After the head is reduced, bone shavings are turned down over it, reinforced by the fragments removed in making the acetabulum. A cast is applied with the thigh abducted to 30 degrees.

Formation of a Supporting Shelf of Bone on Lateral Surface of Ilium Without Digging Out a New Acetabulum.—Dixon and others have reported very satisfactory results in stabilizing these hips by simply forming a supporting shelf on the lateral surface of the ilium without making any effort to dig out an acetabulum. This procedure has the distinct advantage of leaving a smooth surface on the ilium for the head of the femur to move against, lessening the formation of adhesions and limitation of motion that frequently follow digging out a new acetabulum. It is particularly applicable in adults in whom ankylosis is more liable to occur than in children. The functional results reported show that sufficient bony support is obtained.

We have ten cases in which more than one and one-half years has elapsed since the operation and in which we feel that a fair estimate of the results may be determined. The ages varied from 6 to 14 years. The chief and practically only symptom complained of was limp. The head of the femur was smooth, round and fairly well developed in seven cases, in none of which had previous attempts at closed reduction been made. In three cases there had previously been manipulation elsewhere, and although the heads were entirely out of the acetabulum, they all showed atrophic and degenerative changes. The capsule was thickened, and in most cases there was a dense hour glass constriction between the head and the acetabulum which would have effectually prevented reduction.

In four patients, all aged 6, it was possible to replace the head in the true acetabulum without undue tension, the bone being turned down over the upper rim as described above. The results as to function were all good, although the heads developed mild degenerative changes. One case in which the head was levered into the socket showed almost a complete destruction of the head and marked limitation of motion.

In none of the patients over 8 years of age was it found advisable to put the head back into the true acetabulum, a new one being formed on the lateral surface of the ilium. An average of 1 inch in the shortening was all that could be corrected. The results in this group were disappointing. Stability was good, but motion was limited. The heads showed extensive changes. Adduction contractures developed in three cases, and the limp persisted. Function was materially improved in three of the five cases, and as time goes on all will probably show better use than the average untreated hip of adult life. It is too early yet to draw definite conclusions in regard to this.

Reconstruction in Paralytic Dislocations.—These usually occur as a sequence of poliomyelitis, and result from a paralysis of the muscles about the hip joint. There is often an increase in the angle between the neck and the shaft of the femur, a coxa valga which increases the tendency to dislocate. The dislocation may be complete and permanent, or the hip may be thrown in and out of the socket at will by changing the position. Other hips only partially subluxate, but they cause a feeling of instability and the limp is increased by the femoral head sliding up over the acetabular rim.

The head of the femur and the acetabulum are usually fairly well developed, although occasionally the pelvis and entire femur may be much smaller than the normal side, because of disuse from extensive paralysis throughout the leg. Flexion contractures of the hip are sometimes present.

Reduction is easily accomplished, and the head tolerates weight bearing without degenerative changes.

Operations on the soft parts have all been failures, as these structures soon stretch, allowing the head to dislocate again. Permanent relief can be obtained only by providing sufficient bony support from the upper part of the acetabulum to keep the head of the femur from slipping out. A most satisfactory operation to accomplish this has been developed by my colleague, Dr. Willis C. Campbell.

After the usual exposure of the head and acetabulum by the Smith-Peterson approach, a large curved wood-carver's chisel is driven into the ilium about 1 cm. above the acetabulum, and the entire upper portion of the socket with its cartilage is fractured loose and displaced outward for about 1 inch over the head of the femur, thus extending the roof of the acetabulum. The roof is reinforced by filling in the space above it by bone flaps turned down from the lateral surface of the ilium. Fusion of the transplanted bone sufficiently solid for weight bearing occurs in about two months, during which time the patient is kept in a plaster cast.

We have done the operation now in fifteen cases, and the results have all been highly satisfactory. A protective brace is worn for a few months, after which the patients are instructed to bear their weight directly on the hip without support of any kind. None of the hips have redislocated. All patients have had a full range of motion, and none have complained of pain in the joint on weight bearing. The cases have been closely followed by roentgen-ray examination to determine whether destructive changes in the head similar to those in congenitally dislocated hips would occur. So far none have been observed, more than three years having elapsed in some of the cases since the operation.

RECONSTRUCTION IN UNUNITED FRACTURES OF THE NECK OF THE FEMUR

Indications.—The problem of what is the best method of treatment in ununited central fractures of the neck of the femur is one that is often difficult to decide and

taxes the ingenuity and judgment of the surgeon. Aside from the mechanical considerations that have to do with the condition of the head and neck of the femur and the amount of upward displacement of the trochanter, the general physical condition of the patient must always be the first consideration. Most of these patients are well advanced in years and exhibit the cardiovascular and renal diseases that are common at this age. They have all been incapacitated for considerable periods of time, as a result of the original fracture and the pain and instability of the hip that always accompany an unnited fracture at this site. Many have been bedridden or are getting about with great difficulty on crutches. They are poor risks both mentally and physically for difficult operative procedures or prolonged periods of convalescence. In the past, practically all of them were relegated to the class of hopeless cripples. There are certain patients today whose general physical condition is so poor or who are so advanced in age that no operative procedure is advisable.

On the other hand, there are a large group in good or fair physical condition who will have a reasonable expectancy of ten or more years of active life if the hip disability can be removed. It is for this group that the various reconstruction operations on the hip have been devised.

Ununited fractures of the neck of the femur are extremely painful and disabling; injuries usually totally incapacitating the patient for even the simplest activities. An operation that offers a reasonable hope of relief without undue operative mortality is advisable for all those whose general physical condition will permit it.

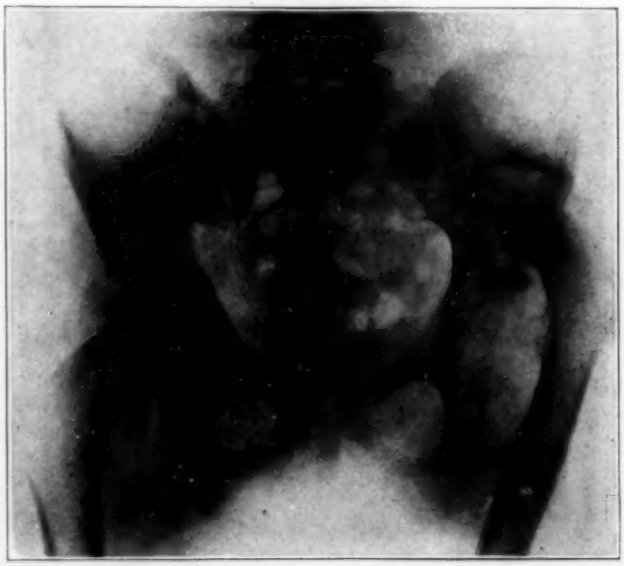

Fig. 1.—Reconstruction operation for congenital dislocation of hip, showing formation of new acetabulum above the original acetabulum.

Pathologic Changes.—The roentgenogram taken in the average case after eighteen months shows typical changes. The trochanter is displaced upward for from 1½ to 2½ inches, and the shaft of the femur is adducted. The short atrophic distal portion of the neck lies in contact with the upper rim of the acetabulum. The portion of the head covered by articular cartilage usually persists, but is pale, mottled and atrophic. The proximal portion of the neck and part of the head beyond the cartilage have disappeared as a result of atrophy and absorption. A definite line can be seen between the fragments, which, at operation, is found to consist of scar and fibrous tissue. When the hip joint is opened, the head is often found to consist only of a cartilaginous shell in which are a few atrophic bony trabeculae surrounded by fatty marrow. The hip joint occasionally shows atrophic changes similar to those seen in the wrist following fractures of the carpal scaphoid.

Whenever it is possible, restoration of bony union between the neck and the head of the femur by means of a bone graft is the procedure of choice. It is often difficult to decide just which cases are suitable for bone grafts, as the roentgenograms are often misleading as to the exact condition of the head. With the improved technic and more extensive experience with the reconstruction operation, the field for bone grafts is gradually being narrowed. In a series of 120 ununited fractures of the neck of the femur, Henderson considered that only twenty-six were suitable for grafts. Only ten of these, or 8 per cent of the total number, gave good results.

No definite time limit can be set as to when the reconstruction operation is to be employed, as some cases are unsuitable for bone grafts at the end of eight months, while in others the head and neck may be remarkably well preserved after two years.

Reconstruction is definitely indicated when the following conditions are present:

1. Marked atrophy of the head and absorption of the greater portion of the neck. Here bony union is unlikely, and even if obtained the position of the trochanter would be unsatisfactory for function.

2. Excessive shortening, as a result of the trochanter having ascended so far that the remainder of the neck lies above the acetabulum. Considerable traction would be necessary to get the trochanter down to a position for grafting, which would cause strain and tension on the graft, probably resulting in its fracture.

3. When the patient's general or economic condition requires a rapid convalescence and the assurance of a stable hip. Bone grafts require much longer periods of immobilization than do reconstructions, and the chances of complete failure are greater.

PURPOSE OF THE RECONSTRUCTION OPERATION

With these conditions present it is manifestly impossible to hope to restore bony union, and we must utilize the structures that remain for the formation of the new joint. An operation for this purpose should offer reasonable assurance, first, of relief of pain, and, secondly, of sufficient stability for ordinary weight bearing with a fair range of motion. To accomplish this, some portion of the upper extremity of the femur must have a bony support under the upper rim of the acetabulum. The nearer the original mechanics of the hip is restored, the better the function will be.

TYPES OF RECONSTRUCTION OPERATIONS

1. *Lorenz Bifurcation Operation.*—This ingenious procedure consists essentially of an osteotomy of the femur just below the trochanter, and the displacement of the lower fragment inward and upward, so that the upper extremity of the shaft rests against the remains of the head within the acetabulum. There are several serious objections to the operation. It is fundamentally not a sound surgical procedure, as the operation is done blindly through a small incision. Regardless of how

familiar one may be with the anatomy of the region, there is no assurance that the end of the shaft will impinge properly against the acetabulum, or that it will remain in the position desired.

The shortening is increased by about 1 inch. This operation reproduces the original mechanics of the hip less closely than any of the other operations described. It has the advantage of rapid performance and little operative shock, with production of fair stability. It can be employed in bad risks when the more extensive procedures would be unsafe. When properly done, the result is certainly better than the condition of nonunion.

2. *Brackett Operation.*—An operation was described by Brackett of Boston in which the trochanter is freshened and the head of the femur reamed out, leaving a shell of articular cartilage. The freshened trochanter is placed within the acetabulum in contact with the remains of the head by widely abducting the thigh. Brackett and others have reported very satisfactory results from this operation.

Two objections have been brought forward against it. Whitman states that if the leg is adducted into the proper weight bearing line the trochanter must be almost completely levered out of the acetabulum. In the one case in which we used the Brackett operation, this complication recurred even though the acetabulum was deepened by turning down of bone chips from the lateral surface of the ilium.

The second objection is that the portion of the head left in is liable to act as a foreign body, causing painful arthritic symptoms unless union with the shaft occurs. We have left part of the head in in three cases in which otherwise a typical Whitman operation was done, with good results as regards both relief of pain and function. Consequently, I do not feel that there is any serious objection to leaving in a part of the head; however, the range of motion and amount of pain was somewhat more than in two cases in which a typical Whitman operation was done with removal of the head.

Fig. 2.—Result of reconstruction operation in which head of femur was retained, the greater trochanter transplanted downward, and upper margin of acetabulum deepened.

3. *Albee Operation.*—After the usual exposure through the Smith-Peterson incision, the head of the femur is removed, and the greater trochanter with its muscular attachments, and the outer portion of the shaft of the femur, are chiseled off and pried outward, forming a bone lever almost 5 inches long. The remains of the neck and trochanter are rounded off and placed within the acetabulum. The thigh is then fully abducted, causing the upper end of the lever to impinge against the lateral surface of the ilium and maintain the angle between it and the shaft. A plaster cast holds the thigh in this position until the gap between the lever and the shaft has been filled in by new bone. Albee reports excellent results in forty-eight cases, particularly stressing the preservation of the function of abduction which is so frequently limited following reconstruction.

The mechanical principles described appear to be sound. I have not had sufficient experience with the operation to make a statement regarding its practicability.

4. *Whitman Operation.*—The operation described by Royal Whitman in 1921 has for me proved to be the most satisfactory. It is based on sound mechanical principles, is relatively easy to perform, and the functional results are good. Whitman removes the remains of the femoral head, chisels off the outer portion of the trochanter with its muscular attachments, reshapes and rounds off the remains of the neck and trochanter, and inserts this into the acetabulum. The leg is then abducted, and the detached portion of the trochanter is transplanted down at a lower level on the shaft of the femur. The remodeled trochanter reproduces in a very satisfactory manner the angle and shape of the original neck. The attachment of the trochanter lower on the shaft helps to hold the reconstructed neck in the socket and allows abduction of the thigh.

We have performed reconstruction operations of various types on seven hips.

The Lorenz bifurcation operation was done once on an elderly woman in very poor physical condition. Later, roentgenograms showed that the resected shaft was not properly placed under the acetabulum, and the result was naturally poor. This was probably due to faulty technic, but it shows the difficulties of performing the operation blindly through a small osteotomy incision.

A combination of the Whitman and Brackett operations was done in three cases. The trochanter was chiseled off and transplanted down on the shaft, the remains of the neck and trochanter were rounded off, and the head gouged out so that only a cartilaginous shell was left, into which the remodeled neck was placed. Bone chips were turned down from the ilium to deepen the acetabulum. The results were all good as to stability, but there was slightly more limitation of motion and pain than in two other cases in which the typical Whitman operation was done.

Two of the cases in which the Whitman technic was used gave hips that are almost normal as regards to function. One, a traveling salesman, aged 58, who had been completely incapacitated for one and one-half years has resumed his occupation, walks on the hip all day without cane or crutch, has no pain and, in his own words "except for some limitation of motion the hip is as good as the other." The other patient, a woman, does all her housework, walks without support, and says that the hip is nearly as strong as it ever was. The relief of pain has been a constant and gratifying result.

All cases have been markedly benefited, and two have been completely relieved.

CONCLUSIONS

1. Reconstruction operations in congenital dislocations of the hip are followed in a large percentage of cases by extensive degenerative changes in the head and neck. The results are disappointing from the anatomic standpoint, but the function is materially better than in the cases in which operation is not performed.

2. The head of the femur in congenital dislocations should not be traumatized or forced into the acetabulum under undue tension.

3. In paralytic dislocations, the operation described above gives excellent anatomic and functional results.

4. Reconstruction operations for ununited fractures of the neck of the femur give good functional results.

5. Reconstruction of the hip is indicated in ununited fractures of long duration in which atrophic changes in the head and neck preclude the probability of bony union.

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ABSTRACT OF DISCUSSION

DR. HENRY W. MEYERDING, Rochester, Minn.: Dr. Speed has splendidly illustrated the possibilities of modern surgery in the reconstruction of deformities and fracture of the hip. I agree with him that the operation designed to reduce these old high dislocations to their normal position is to be condemned, as a turning down of a flap of bone from the ilium has given encouraging results. The Whitman operation for ununited fracture of the hip can, as a rule, be done rapidly and with less shock than other operations, and is by all means advisable when the patient's general condition is not satisfactory. It also permits earlier function. Properly performed bone-grafting operations in ununited fractures of the hip give excellent results in selected cases. The Brackett operation may be used to hold coxa vara. The question of reconstructive surgery of the hip can hardly be discussed without taking into consideration the types of persons who apply for this treatment, especially in the fracture cases, as most of them are too old or their physical condition is such that operation cannot be done without considerable risk. Some patients have come to us with the fractures united, with arthritis, because of pain or deformity. Many had complaints such as heart or kidney trouble, or advanced age, which contraindicated operation. Some had pathologic fractures or tumors, and a certain number had fractures so recent that they would unite if proper treatment was given. With a careful selection of patients in various operations, the percentage of good results is about 83. We prefer the bone-grafting operation if the patient's physical condition permits it and if there is a good neck present.

DR. ARTHUR STEINDLER, Iowa City: Referring to what Dr. Meyerding has said about his group of nonoperable cases: The only operation left for these is the bifurcation operation of Lorenz. I have performed this operation in several such cases which did not seem good enough operative risk for anything else. I believe that weight-bearing hips can be produced in these cases. It has been said that this operation is nonphysiologic and even nonsurgical. I fail to see it. In an emergency this operation should be considered.

DR. BEN L. SCHOOLFIELD, Dallas, Texas: The Whitman operation for ununited fractures with absorption of the neck of the femur is the best procedure that has been devised in my opinion.

DR. J. S. SPEED, Memphis, Tenn.: I do not want to be misunderstood about the bifurcation operation. I think it is an emergency measure, and where it has to be used it is applicable, as I said; but I do think it restores the mechanics of the hip joint with less atrophy than any of the other operations described, and when they can be employed they are preferable to the operation. The operation that we have done in four or five cases is a combination of the Brackett and Whitman procedure. The trochanter is taken over as in the Whitman operation, but a shell of the head has been left, and some bone has been turned down to get a stabilization of these hips. This operation has the objection that a portion of the head is left in and may bring about arthritic changes. However, in four cases in which we have done it, very good and satisfactory hips have been obtained. There has been, however, less motion and a little more pain than in those cases in which the straight Whitman procedure is used. I feel that we have obtained the best results from the Whitman operation. We have two patients that have been restored to practically normal use of the hip. I believe that in ununited fractures of the hip, when there is doubt as to obtaining bony union by a bone graft, the reconstruction operation is the method of choice. It shortens the convalescence, gives more assurance of a reliable hip, and has certainly been proved in a number of cases to be a satisfactory and reliable procedure.

CHOLECYSTITIS AND ITS RELATION TO PANCREATITIS

A CLINICAL AND EXPERIMENTAL STUDY *

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The subject of cholecystitis is of especial interest because of its dependence on primary foci of infection in more exposed parts of the alimentary tract, and because of its relation to the pathologic changes in the regional lymphatics of the ducts, liver and pancreas. It is common knowledge among experienced observers that gallbladder disease is often associated with appendicitis, with ulcerations of the stomach, duodenum, ileum or colon, and with systemic diseases. Infection from these sources is believed to be carried very often by way of the portal vein and its tributaries to the liver, where it is either destroyed or returned through the lymphatics of the bile passages and pancreas. It is remarkable that the fluctuations in the blood sugars of cases of cholecystitis appear to correspond fairly closely with the extent of involvement of these pancreatic and biliary lymphatics. The suggestion arises from these observations that rational treatment of infections of the gallbladder may be good prophylactic treatment for diabetes.

This report is based on an analysis of the records of the last fifty hospital cases, on the office records of the last eighty-five cases of cholecystitis in which I operated, and on observations made from time to time under well controlled laboratory conditions of experimentally produced cholecystitis in dogs.

By cholecystitis in this discussion is understood an enlarged, thickened, inflamed or adherent gallbladder which often does not empty under moderate digital pressure and which most frequently contains stones. Enlarged regional lymph nodes are more often present than absent, and the liver very often shows cirrhosis, if not generalized, at least confined about the gallbladder bed. The pancreas has quite often undergone organic changes which the surgeon interprets as "thickened," "enlarged," "nodular" or "hard." It is believed that when these changes exist in the pancreas they can always be found in the liver.

From a consideration of table 1 it may be observed that the pancreas was found thickened in 36 per cent, normal in 36 per cent, and not determined in 28 per

* From the Department of Surgery, New York University and Bellevue Hospital Medical College.

* Read before the Section on Gastro-Enterology and Proctology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

cent of the cases examined. In patients in whom an exploratory operation was possible, thickening was observed in more than 50 per cent. The nodes were observed to be enlarged in 47 per cent, and normal in 21 per cent; 32 per cent were not investigated. In this investigation, glandular enlargement was determined in more than two out of three, or 69 per cent, of the patients.

TABLE 1.—*Consecutive Series of Cholecystitis, with Incidence of Pancreatic Thickening and Regional Lymph Node Enlargement* *

Case	Condition of Gallbladder	Pancreatic Thickening	Nodes Enlarged
33	Acute perforation	?	?
34	Hydrops	+	+
35	Chronic inflammation	0	0
36	Acute	?	?
37	Stones	+	+
38	Acute	?	?
39	Stones	0	0
40	Stones	0	0
41	Acute perforation	0	+
42	Hydrops	?	?
43	Stones	+	+
44	Stones	?	+
45	Stones	+	+
46	Acute inflammation	0	+
47	Stones	0	0
48	Stones	0	?
49	Stones	+	?
50	Stones	?	?
51	Stones	0	+
52	Stones	0	0
53	Acute perforation	?	+
54	Acute inflammation	+	+
55	Chronic inflammation	?	?
56	Stones	+	+
57	Stones	+	0
58	Stones	+	+
59	Chronic inflammation	+	+
60	Stones	+	0
61	Acute inflammation	+	0
62	Acute perforation	+	+
63	Acute inflammation	+	+
64	Acute inflammation	?	?
65	Stones	0	+
66	Chronic inflammation	0	+
67	Stones	+	+
68	Chronic inflammation	0	+
69	Acute inflammation	0	0
70	Stones	0	0
71	Stones	+	+
72	Stones	0	+
73	Acute perforation	?	?
74	Chronic inflammation	+	+
75	Stones	0	0
76	Chronic inflammation	?	?
77	Acute perforation	?	?
78	Hydrops	?	?
79	Stones	?	?
80	Stones	0	?
81	Chronic inflammation	+	+
82	Stones	0	+
83	Stones	0	+
84	Stones	+	?
85	Stones	?	?

* Cases 1 to 32 indicate pancreatic thickening in 25 per cent (New York M. J., December, 1922).

The chief gross pathologic condition is indicated in the first column. The carcinomas of the gallbladder-pancreas group, of which there were ten during the same period of time, have not been included. In the second column the cases of pancreatic thickening are indicated by +; those with no thickening, by 0, and those not determined, by ?; in the third column, + indicates enlarged glands; 0, normal nodes, and ?, glands not investigated.

The ages in a hospital group of fifty patients on whom operation was performed (1923-1925) ran from 13 to 68, with a mean age of 42.75 years. The women were one and a half times more frequently affected than the men, a ratio that varies considerably with the different experiences. In forty-nine cases, the appetite was given as "good" in twelve, as "poor" in fourteen, and as "fair" or "unchanged" in twenty-five. This applies to patients who were questioned on admission to the hospital. It is evident that had these persons presented themselves during the acute attack, or during the interval of normality between the attacks, the appetite would have been described as absent or good.

In fifty patients, the first symptom complained of was pain. It was localized in the right upper quadrant in twenty-six, in the epigastrium in twenty, in the central abdomen in five, in the back in two, and in the right lower quadrant in two. Other, scattered patients gave jaundice, chills and fever, nausea or gaseous eructations as the first complaint in their illnesses. I have occasionally observed upper left quadrant reference for the gallbladder pain, in at least two instances in left handed persons. In studying abdominal wall irritability in the dog with experimental cholecystitis, one notes that the two upper quadrants are about equally responsive to stimuli. This observation, coupled with the "amphidextrous" character of the animal's forelegs, may have a significance in the explanation for the localization of the pain in the right or left upper quadrants in human beings.

The average duration of symptoms has been two years. This includes several who appeared after or during the first attack. In other words, fifty persons with gallstone disease, destined ultimately to seek relief through surgery, will go two years after the first indication of gallbladder disease before being admitted for surgical treatment.

The interval between the attacks is of little significance in that this time varied from a few days to several years. In certain instances there were but two attacks, an initial one followed by a period of several years, and then the final or present attack.

Pain was common to all cases and brought the patients into the hospital. Its radiation was most frequently, as commonly described, along the right subcostal border to the back and right shoulder; occasionally it radiated to the right flank, to both shoulders, to the interscapular region, to the right leg, to the epigastrium, or "over the abdomen." This pain of gallbladder disease probably is in most instances a misreference from cells in the upper dorsal cord, and the surface area to which reference is made comprises the right hypochondrium and the right lumbar and right scapular regions. There may be other cord centers of greater relative irritability in the atypical cases, but more probably the association of other pathologic changes such as appendicitis, gastric or duodenal ulcer, or pelvic disease often accounts for the presence of pain in other locations.

This pain may bear no relation to meals, or its relationship may remain in doubt. Occasionally it occurs from fifteen minutes to two hours after eating. Many patients associate the pain with the eating of greasy foods, and are awakened at night after the ingestion of the heartiest meal of the day. The starchy foods appear to be more closely related to the gastric cramp or epigastric pain than to the pain of direct biliary origin.

Eructations, nausea and vomiting, or the symptoms of reversed gastric peristalsis are characteristically always present in proved cases of uncomplicated cholecystitis with stones. Of these the most common is nausea. Vomiting is probably more common in this series than in the gastric ulcers. From experiments, it appears that epigastric pain, nausea and vomiting depend on biliary stimuli of varied strength: that one degree of irritation may provoke gastric cramp, a stronger stimulus nausea, and a still greater irritant force vomiting. From these observations, one would be inclined to regard vomiting as indicative of a more severe attack. Constipation is recorded in twenty-seven, diarrhea in one, and no change in twenty-one cases. Jaundice occurred in twenty-two of the cases in which

operation was performed, as compared to thirty without jaundice.

Loss in weight appears to be an indication of some complication of cholecystitis, such as cirrhosis of the liver or pancreas, ulcer of the stomach or duodenum, or a malignant growth. It has to be taken into account in giving a prognosis.

Of the local signs in the hospital series, tenderness was elicited forty-eight times, and not induced in two;

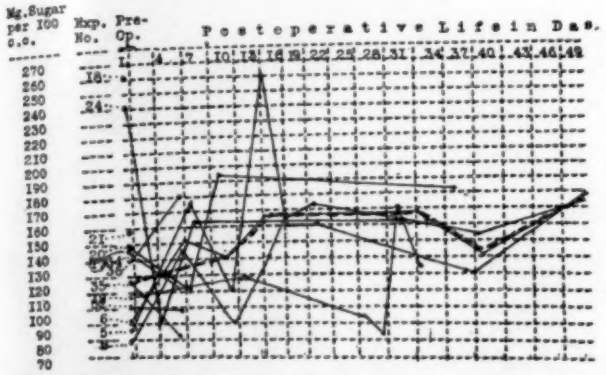


Fig. 1.—Blood sugar tracings in dogs before and after production of experimental cholecystitis. Broken line represents mean rise.

rigidity was present in thirty-four cases and was absent in sixteen; a mass was noticed in fourteen, and was absent in thirty-six; hyperesthesia of the skin and subcutaneous tissue was present in twenty-seven, and was absent in twenty-three. The relative importance of these physical signs is self-evident with the possible exception of the head zone hyperesthesia, which is believed to be present more often than is recorded. Livingston [1] has reviewed these viscerosensory phenomena in the 1922-1923 cases, and he concludes that "acute distention within the biliary ducts uniformly produces localized cutaneous hyperesthesia."

The laboratory examinations were carried out as a routine in the chronic cases. The feces showed blood and bile as a rule, bile derivatives being absent in three out of twenty-two cases. The gastric contents showed hypoacidity twelve times and hyperacidity six. Blood was occasionally present. The blood counts, taken in every case, run lower in total and differential leukocytes than they do in the appendix series. The chemical changes of the blood taken in a large proportion of the chronic cases indicated in many hyperglycemia. It was this relationship of high blood sugar to cholecystitis that suggested the experimental series that follow. Wassermann reactions were positive in six and negative in thirty patients. Roentgenograms were negative in fifteen and gave indirect evidence of cholecystitis in six, and an associated duodenal ulcer in five. Transillumination tests of the bladder by means of the tetraiodide excretion method have been made in selected cases. Through cooperation with the medical division, urobilogen, levulose and phenoltetrachlorphthalein tests were carried out on the chronic cases. The value of these laboratory examinations checked up against the observations made at operation can scarcely be overestimated.[2]

1. Livingston, E. M.: Further Studies of Viscerosensory Phenomena, J. A. M. A. **82**: 1495 (May 10) 1924.

2. Wallace, G. B., and Diamond, J. S.: Significance of Urobilogen in Urine as a Test for Liver Function, Arch. Int. Med. **35**: 698-725 (June) 1925.

EXPERIMENTAL DATA ON HYPERGLYCEMIA IN CHOLECYSTITIS

A series of fifteen experiments were conducted as follows: A presumably normal mongrel dog was prepared for laparotomy by administration of morphine and ether, shaving, and cleansing of the abdominal field. Under sterile precautions the abdomen was opened, and the gallbladder was identified and incised. A glass bead containing fecal matter and bacteria was dropped into the bladder, and the bladder was closed with a suture and left attached within the plane of closure of the abdominal wound. After such an operation the animal was placed in the recovery cage and fed water, fluids and solid material according to the return of its appetite. The diets of the fully recovered animals consisted of meat scrap from the tables of the hospital dining rooms. The blood sugars of each animal were estimated before operation, and at intervals of from three to five days after operation. After a time interval of from one to sixty days, each of the experiments was terminated by the death of the animal to determine the pathologic changes that had taken place within the abdomen.

TABLE 2.—*Summary of Experiments on Cholecystitis and Pancreatitis*

Experiment	Duration, Days	Mg. per 100 Cc. Blood Sugar: Before Operation	Mg. per 100 Cc. Blood Sugar: After Operation	Pathologic Condition
3	17	88	?	
5	60	96	170 120 260 160 160 130 180	Cholecystitis; lymphadenitis, biliary, pancreatic, and celiac
6	60	100	150 140 140 165 175 150 175	Cholecystitis; lymphadenitis; pancreas thickened
8	37	88	146 100 140 148 166	Cholecystitis; lymphadenitis; pancreas thickened
11	2	?	?	
17	0	134	...	
18	3	260	?	Death from infection
19	30	116	126 105 90 170 136	Cholecystitis; lymphadenitis; abscess of pancreas. Mic.: congestion; infiltration; hyalinization of islands of pancreas
20	35	136	120 195 192	Cholecystitis; lymphadenitis; pancreas thickened
21	1	156	?	Death from infection
24	32	240	100 164 160	?
35	6	126	92	Cholecystitis
37	10	110	108	Cholecystitis; lymphadenitis; pancreas thickened. Mic.: congestion; slight hyalinization; degeneration of acinous cells

The particular blood sugar data and pathologic changes are summarized in table 2. The fluctuations in blood sugar content in relation to mean sugar content of the total series studied appears in figure 1.

Glycosurias were noted in the animals examined.

It is worthy of especial attention that the animals showing rises in the blood sugar after operation were animals in which pathologic changes were taking place

about the gallbladder, in the lymphatics of the bile ducts, liver and pancreas, or in the pancreas itself. Two animals with a distinct fall in the blood sugar after operation gave no evidence of lymphadenitis. The mean rise for ten observations was from 125 to 140 mg. per hundred cubic centimeters of blood for the first twelve days, or from 125 to 165 mg. for the first month after the introduction of infectious material in the gallbladder. Experiment 19, with an abscess of the head of the pancreas, was narcotized on the thirty-second day during a rising sugar to determine the possible effects of the anesthesia and operative traumas on that sugar. It was observed in this instance that the percentage fell from 170 to 135 mg. in the succeeding three days. It is felt that the rise in the blood sugar in these experimental animals has been due not to anesthesia, nor to diet nor to confinement of the laboratory animals, but to morphologic changes in the pancreas consequent on infection lymphatic borne from the gallbladder and liver.

The frequent association of diabetes or hyperglycemia with cholecystitis and pancreatic thickening in the human patient, as encountered in the surgical ward of Bellevue Hospital, has led to the suspicion that the diabetic state may be in part, at least, of infectious origin. The foregoing experiments were undertaken to determine whether infection arising in the gallbladder and spread by the lymphatics gives rise to hyperglycemia.

It is interesting to compare the experience of Joslin.[3] He writes:

> It is not unreasonable to suppose that the pancreatitis that may lead to the destruction of the islands of Langerhans may actually originate in the gallbladder region. . . .

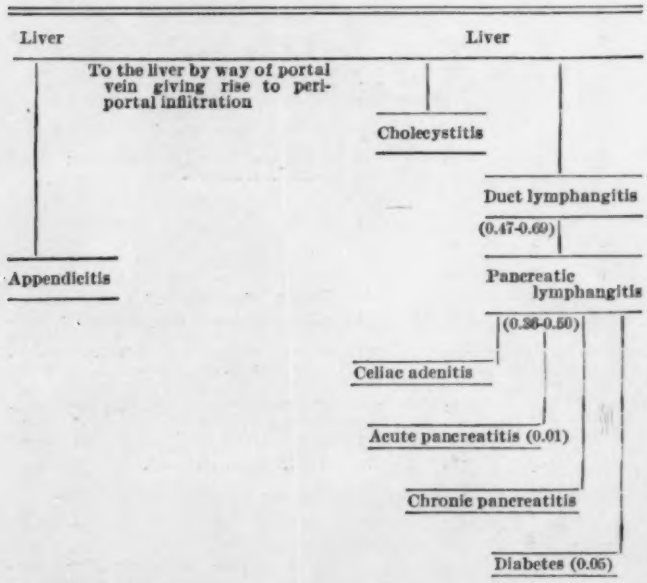


Fig. 2.—Method of extension of infection within the abdomen.

The mildness of the diabetes associated with gallstones is notable. Several cases have done remarkably well when the inflammation about the gallstones has subsided.

He gives tables of seventy-three persons from the first 3,000 cases whose average age at diagnosis was 45, and whose average age at the onset of diabetes was 47. Of these, twenty-two were males and fifty-one females. He further says:

> I have been able to associate infections with diabetes in 15 per cent of 400 cases. The marked lowering in the tolerance for carbohydrates in diabetic patients when an infection appears is an emphatic demonstration that this subject should be thoroughly investigated, and I certainly remain open-minded upon it. . . . My advice to nondiabetic patients with gallstones is to be operated not because of the danger of repeated attacks of gallstones and of the danger of a subsequent carcinoma, but also because of the danger of the development of diabetes. In my diabetic patients my advice is to have the gallstones removed when the conditions of time, place, surgeon and physician are all propitious.

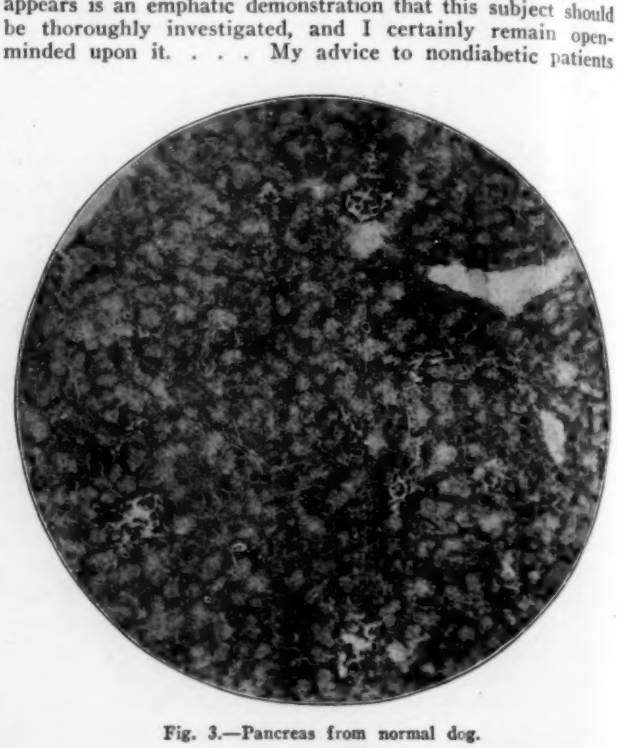


Fig. 3.—Pancreas from normal dog.

Allen[4] reports diabetes associated with cholelithiasis in the cases from the Presbyterian Hospital, and summarizes the microscopic observations in these diabetic patients as follows: diminished islands of Langerhans, fibrosis of the pancreas, hyalinization of the insular tissue, vacuolization of the beta cells in the islands, and areas of hemorrhage. The changes in the interlobular masses, enumerated above, were observed in specimens removed from five of our experimental animals. Dog 35 showed no sugar increase and no gross pathologic change, had a diffuse parenchymatous degeneration of the pancreas and fatty degeneration of the liver.

In the eighty-five cases in which I operated, there were four deaths. Three occurred in nineteen cholecystostomies in complicated cases, and one occurred in a cardiac case in sixty-six cholecystectomies. One drainage failure was an acute pancreatitis in which the patient lived until the fourteenth postoperative day. The second collapsed on the ninth day of bile drainage following a gastrojejunostomy performed at the time of the ostomy for a chronic perforating gastric ulcer. The third succumbed with symptoms of cerebral thrombosis the day following drainge of a very inaccessible phlegmonous bladder only two weeks after a laparotomy for a ruptured gangrenous appendix. In reviewing these cases, one cannot but feel that the loss of bile

3. Joslin: The Treatment of Diabetes Mellitus, 1923, pp. 476-479.

4. Allen: F. M.: J. Metabol. Research, January and February, 1922.

in many of these overfat persons and in patients of already lowered resistance, constitutes a very serious handicap to their convalescence. Halsted realized this a short time before his death and proposed clamping the choledochostomy catheter to check bile loss. At the same time, one is equally impressed with the often undisturbed and normal convalescence following the removal of the gallbladder in properly chosen cases. Figured on a percentage basis, the mortality for the ostomies is 16 per cent, that for ectomies is 1.5 per cent, and the fatality for both in the whole consecutive series of eighty-five cases is 4.7 per cent.

The follow-up data on the cholecystectomies has been uniformly good. It is impossible to draw any logical conclusions from the drainage cases because so many were complicated by other organic disease.

CONCLUSIONS

1. Cholecystitis in many instances is a part of a general infection which has reached the liver and bladder through the portal vein.

2. Infection, not destroyed in the liver, is traceable to the celiac nodes through the lymphatics of the bile ducts and pancreas. Enlarged regional glands have been observed in 47 per cent of eighty-five cases in which operations were performed, or in two of three of those patients in whom exploration was possible. Pancreatic thickening appeared in 36 per cent, or in more than 50 per cent of the explorable group.

3. A lowering of the tolerance for carbohydrates was indicated by hyperglycemia in an experimentally controlled series of cholecystitis. The mean rise for ten observations was from 125 to 140 mg. per hundred cubic centimeters of blood for the first twelve days, or from 125 to 165 mg. for the first month of gallbladder inflammation.

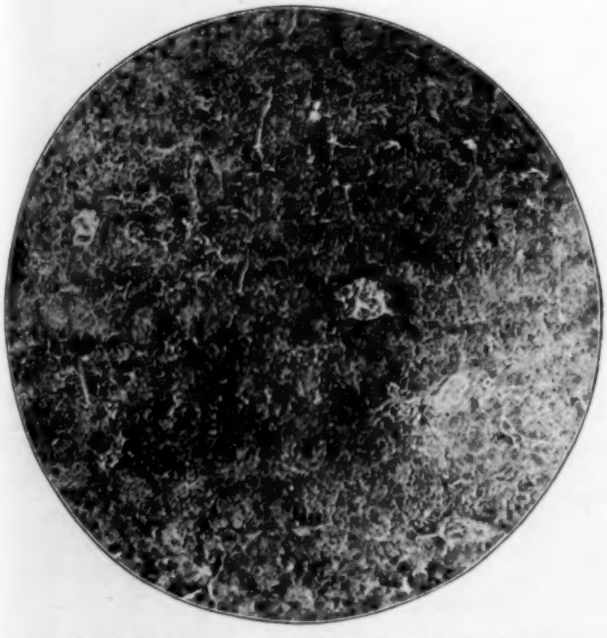


Fig. 4.—Pancreas from dog with infected gallbladder.

4. From these observations it is recommended that surgical treatment of gallbladder infections be considered early in all operable cases to protect against the dangers of diabetes.

21 West Fifty-Fourth Street.

ABSTRACT OF DISCUSSION

DR. FRANK SMITHIES, Chicago: I think that since Dr. Barber has explained the sources and spread of infection by his charts he will be prepared to drop the term "gallbladder disease." For the sake of clinical thought, apart from the rationale of treatment, we ought to get out of the literature the term "gallbladder disease" and speak of "biliary tract" and "liver" disease. Dr. Barber has shown that in practically all instances of so-called gallbladder disease there are many parts adjacent or connected with the gallbladder which, anatomically or functionally, are affected. In our own group of 1,000 operatively demonstrated "gallbladder" cases, we found hepatitis in nearly 60 per cent, pancreatitis in 14.5 per cent, and, where the lesion had advanced to the stage of stone or common duct disturbance, grossly demonstrable pancreatitis in 28 per cent. This is an important point because it determines methods of treatment. We must not surgically treat these ailments by cholecystectomy or cholecystostomy merely according to the ease in which the procedures may be performed. The operative guides should be the laboratory, clinical and pathologic evidence available with repsect to liver integrity, pancreatic or lymph node involvement, and duct dilatation. This means not haphazard removal of the gallbladder, but selective surgery guided by preoperative laboratory returns, duodenal gall tract drainage and evidences of the degree of involvement of related organs as seen at laparotomy. Surgeons and clinicians all too frequently have made extensive preoperative laboratory studies, but at operation pay no attention to the returns but do cholecystectomy as a routine. So-called diabetes with gall tract disease is not a true diabetes. Glycosuria appears in from 3 to 6 per cent of these patients, usually at intervals, as infection or circulatory embarrassment becomes active or extends. The blood sugar is rarely high and diet and insulin are of only irregular value. The glycosuria results from indirect interference with island function consequent on pancreatitis, and from faulty glycogen storage as a result of hepatitis. The patient constitutes a large proportion of those long-lived patients with mild diabetes. Coma rarely occurs, either transiently or as a terminal process. Treatment of the biliary tract diseases by nonsurgical drainage or, in selected instances, by surgery markedly affects the glycosuria. Even after operation, nonsurgical drainage is often needed. This postoperative care is frequently neglected, and the results of operation are disappointing.

DR. JOHN J. GILBRIDE, Philadelphia: Dr. Barber has given us a connecting link between infection and hyperglycemia. We have known of the association of pancreatitis with infections in other parts of the body, but we have not known, because of insufficient data, the relationship of infection to disturbed sugar metabolism.

DR. W. HOWARD BARBER, Chicago: "Gallbladder disease" is at times a bad term. It is a part of a general systemic disease. It comes out beautifully in typhoid cases in which medical and surgical men see the patients together. These patients very seldom should be operated on. The functional tests are carried out in conjunction with the medical service. We study them together, furnishing the pathologic data in an effort to establish value for the respective tests given. The levulose, urobilogen and phenoltetrachlorphthalein tests are the three used in appropriate cases of cholecystitis. I did not use the term "diabetes" until the very last, because I dislike it. The condition referred to is a hyperglycemia with a transitory glycosuria or a transitory diabetes. But from the standpoint of prophylaxis in diabetes, is it not well to treat the gallbladder? Might not true diabetes be engrafted if it continues?

Health and Education.—Health is not the end of life or education but it is an essential condition for the realization of worthy ends, more immediate or ultimate, in the career of the individual. The epigrammatic question may well be reiterated, "What shall it profit a child if he gain the whole word of knowledge and lose his health?" What may a child be allowed to accept by those in any way responsible, in exchange for any actual or vital part of his health?—Wood: Health and Education, p. 9.

THE PYELOGRAPHIC DIAGNOSIS OF RENAL AND PARARENAL NEOPLASMS *

DANIEL N. EISENDRATH, M.D.
AND
IRVIN S. KOLL, M.D.
CHICAGO

Pyelography (and of course ureterography) are not employed to the extent they should be in the differential diagnosis of intraperitoneal from retroperitoneal tumors. The urologist and the radiographer have learned that certain changes in the pyelogram or the ureterogram or in both are almost routine observations in renal and ureteral as well as in immediately adjacent retroperitoneal neoplasms. The most typical of these alterations in the contour, location, etc., can be grouped thus:

1. Spider, dragon, carnation like and similar distortions, as illustrated in figures 1, 2 and 3.

2. Filling defects, as shown in figure 4.

3. Displacements of the ureter either with or without accompanying changes in the pyelogram, as shown in figures 3 and 5.

4. Those in which the pyelogram or ureterogram or both do not differ in appearance from those seen in congenital conditions (atony or stricture), in inflammatory dilatation, or in cases of nonmalignant obstruction of the ureter or kidney. In these a differential diagnosis is impossible from the ureteropyelogram alone.

5. Those in which the findings do not vary in the least from the normal. We have not encountered such a case, but mention it for the sake of thoroughness because one of the European urologists speaks of such a possibility.

We have three objectives in the present contribution: First, to review briefly the more characteristic changes [1] due to renal and pararenal neoplasms; second, to direct attention again to the necessity of familiarity with the many variations [1] to be observed in normal pyeloureterograms; third, to emphasize the fact that certain nonmalignant conditions of the kidney itself [1] or of the immediately adjacent fatty capsule may cause pyelographic changes that are very deceptive.

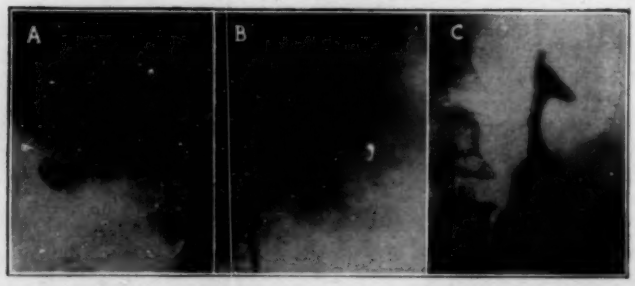


Fig. 1.—*A*, deformity of inferior calix in hypernephroma; *B*, elongation and displacement of middle calix by hypernephroma; *C*, beginning "spider" pyelogram in hypernephroma.

* From the Urological Department of Michael Reese Hospital.

* Read before the Section on Radiology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. In the Journal of Urology (14: 615 [Dec.] 1925) and in a paper to appear shortly in Radiology will be found more detailed descriptions of these changes and errors in interpretation as well as the variations in normal pyelograms.

TYPICAL OBSERVATIONS IN RENAL AND PARARENAL NEOPLASMS

The terms spider, dragon, carnation, bizarre, filling defects, and the like are being constantly employed to express the pyelographic changes due to compression with elongation or invasion of the renal pelvis and its calices. It is not difficult to visualize how a tumor that impinges on or has extended into the renal pelvis (fig. 4) may prevent distention of one or more major or minor calices by the opaque pyelographic medium

Fig. 2.—Typical "dragon" pyelogram on left side, and incipient changes on right side in bilateral polycystic kidney.

and give rise to a filling defect. Similarly the compression, elongation or analogous distortions of the renal pelvis itself or its calices by neoplasms can cause deformities in the pyelographic picture of every conceivable variety, with resultant changes which render it possible to make a diagnosis in many cases long before a mass can be felt. We are passing through the same stage in the diagnosis of renal tumors that was experienced in gastric cancer before routine barium ingestion was employed, and dependence was placed only on clinical symptoms and palpatory observations. Many still await the possibility of feeling a tumor before a diagnosis of renal neoplasm is made. We cannot, it is true, distinguish at present between the various types of neoplasms of the kidney by pyelographic changes alone except perhaps in the case of polycystic disease, which, although due to developmental error, is almost as disastrous in its displacement of still functioning renal parenchyma as though it were a true neoplasm. Pyelography is nevertheless of inestimable value even in the early diagnosis of polycystic disease at a period when perhaps only hematuria or symptoms of renal insufficiency point to the urinary tract. The distortions as seen in the pyelograms of polycystic disease are characterized (*a*) by the bizarre forms of the compression and distortion [2] so that they are often called "dragon" (fig. 2) pyelograms, and (*b*) because of the fact that the changes are often bilateral at a time when the opposite kidney was deemed normal. We believe that the employment of simultaneous bilat-

2. An instructive illustration of two of our cases appeared in THE JOURNAL, March 20, 1926, p. 825.

3. We plan to discuss the advantages of simultaneous bilateral pyelography in a paper to appear shortly.

eral pyelography [3] is as devoid of danger as a bilateral lavage of the renal pelves for therapeutic purposes, and is of especial value in cases in which a loss of function of about equal amount points to some form of bilateral disease.

In several recent cases we have been able to detect a bilateral polycystic condition when all clinical evidence pointed only to one kidney as the seat of disease. We have made another observation which has also been reported by one European urologist: often in polycystic disease, the tips of the minor calices (fig. 2) remain intact even though there is marked distortion elsewhere.

Displacement of the ureteral (opaque) catheter or of the ureterogram toward the midline or even beyond it or laterally, i. e., in an outward direction from the normal course of the ureter (figs. 3 and 5), is significant in the differentiation of retroperitoneal neoplasms and cysts from those of the kidney. In both renal and pararenal tumors there may be ureteral displacement (mesial or lateral), but in pararenal neoplasms the pyelogram (fig. 5) shows little if any change, while the opposite is true of an intrarenal growth (fig. 3).

VARIATIONS IN NORMAL PYELOGRAMS [4]

There are two basic types of normal pelves: (*a*) the ampullary with major calices of variable length (fig. 6), and (*b*) the bifid (fig. 7). We are just beginning to appreciate the fact that there are innumerable deviations to be found clinically from these two forms as given in the descriptions and illustrations of renal pelves by anatomists. Those who have occasion to interpret pyelograms must be thoroughly familiar with such variations because some of them, to which we have applied the term "pseudospider" (fig. 8), may greatly resemble the distortion seen in neoplasms. In several recent cases of hematuria we would have made such a mistake had we not noted a similar type of pelvis on the opposite side (fig. 8 *B*).

Fig. 3.—"Carnation" like deformity of pyelogram with mesial displacement of ureter in hypernephroma.

Another error in the interpretations of normal pyelograms is to overlook the possibility of the presence of a kidney which has either rotated incompletely (fig. 8 *A*) or has failed to rotate at all so that its pelvis is on its ventral aspect, a finding quite typical of certain anomalies, such as congenital solitary (fig. 8 *B*) horseshoe or ectopic kidneys.

4. Eisendrath, D. N., and Arens, R. A.: Variations of the Normal Pelvis, Radiology, to be published.

PYELOGRAPHIC CHANGES DUE TO INFLAMMATORY CONDITIONS OR BLOOD CLOTS

We have reported elsewhere [5] three cases in which there was such a marked degree of alteration in the pyelogram as to lead us in two cases to suspect the development of a neoplasm in a calculous pyonephrosis, and in a third one a neoplasm with fever, a combination to which Israel first called attention. In one of these

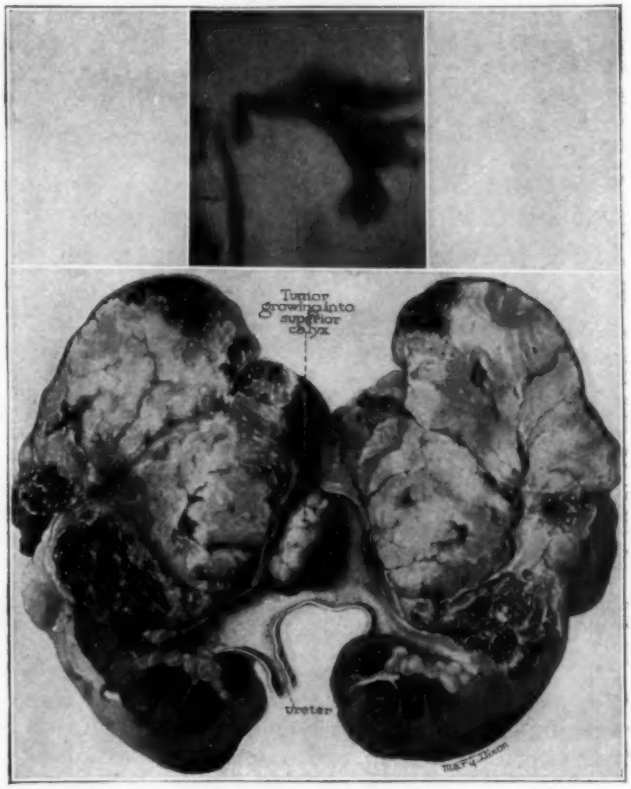


Fig. 4.—Below, kidney showing how tumor (hypernephroma) has invaded renal pelvis; the only symptom was pain. Above, pyelogram from same case, showing typical "filling defect."

three cases, the cause of the pyelographic distortion was found to be advanced fibrous changes of the fatty capsule. In a second case an atrophic pyelonephritis complicating calculi in the renal calices was, as the result of its retraction of the parenchyma, found to be the underlying condition. In the third patient, the compression of the renal pelvis and calices with elongation of the latter was found to be a perinephritic abscess. We are able to add a fourth case in which an advanced renal tuberculosis was complicated by suppuration of the adjacent tissues and gave rise to a pyelographic deformity (fig 9 *A*) greatly resembling that of a neoplasm. Six months later when the kidney was removed there was comparatively little change (fig. 9 *B*) in the pyelogram.

We would also direct attention to errors made as the result of the presence of blood clots or fibrinous exudate giving rise to pyelographic changes (distortion, filling defects, etc.) simulating those of neoplasms.

SUMMARY

1. Ureteropyelography is almost indispensable in the differential diagnosis of renal and pararenal neoplasms from those arising from intraperitoneal structures.

5. The pyelograms are to be found in our first article (J. Urol. **14**: 615 [Dec.] 1925).

2. There are certain pyelographic changes that are of unquestioned value in the diagnosis of renal neoplasms and polycystic disease. To these deformities the terms dragon, spider, etc., have been applied. The presence of a filling defect is as typical of neoplasm if one can exclude the presence in the renal pelvis of blood clots, fibrinous exudate, etc.

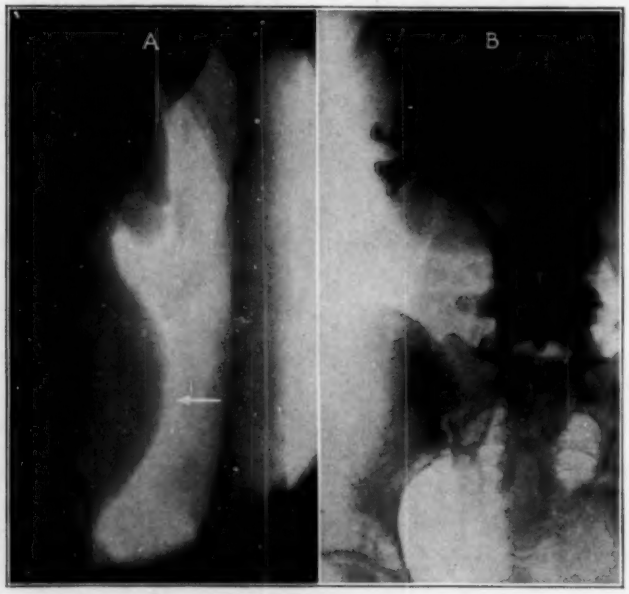


Fig. 5.—*A*, pneumoperitoneum, showing a shadow over spine due to retroperitoneal cyst; *B*, ureteropyelogram from same case with mesial displacement of ureter but normal pyelogram.

3. Deviation of the ureteral (opaque) catheter or of the ureterogram is found in both pararenal and intrarenal neoplasms. In pararenal (retroperitoneal sarcomas, cysts, etc.) there is no change in the contour of the pyelogram, but the latter may reveal evidences of rotation or displacement of the kidney. In intrarenal neoplasms, on the other hand, there are always pyelographic changes in addition to the ureteral displacement.

4. Familiarity with the many variations in normal pyelograms especially of the "pseudospider" type is essential in order to avoid errors in pyelographic interpretation.

5. Certain inflammatory (nonmalignant) conditions either of the fatty capsule (suppurative or fibrous perinephritis) or of the parenchyma of the kidney (atrophic pyelonephritis, tuberculosis) may give rise to pyelographic changes greatly resembling those of neoplasms.

104 South Michigan Avenue.

ABSTRACT OF DISCUSSION

DR. B. H. NICHOLS, Cleveland: I subscribe to all that Dr. Eisendrath has said. A pyelogram demonstrating a kidney pelvis which is not completely filled may represent a pathologic condition or it may be due to an incomplete filling at the time of the injection. If this question arises it can always be eliminated by taking another pyelogram. A typical filling defect of the whole lower calix and lower portion of the pelvis may be due to a tumor or to a duplex kidney. A dumb-bell-like appearance of an apparently normal upper calix with no solution in the lower portion suggests a duplex kidney, and a ureterogram should be done to demonstrate the bifurcation of the ureter. No solution in the kidney or calices, but an abrupt interruption of the ureterogram in the ureteropelvic junction, is a rather typical picture of an aberrant blood vessel to the lower pole of the kidney, which obstructs the ureter at this point. An irregular filling defect in the kidney pelvis might be mistaken for a tumor. Hypernephroma of the kidney causes characteristic pressure deformities. A fanlike appearance of the outer half of the pyelographic shadow with a hydronephrosis of the pelvis is more or less characteristic of carcinoma of the kidney.

DR. FELIX BAUM, Denver: Dr. Eisendrath mentioned pneumoradiography but did not show us any cases. This method was published first by Paul Rosenstein and repeated by Carelli. The technic of Rosenstein's method is very simple and accidents do not occur if we observe all the cautions mentioned in his first publication.

DR. C. A. WATERS, Baltimore: It has been our experience that in the four main groups of kidney lesions—hydronephrosis, tuberculosis, polycystic and renal neoplasm—there is a definite anatomic and pathologic reason for the roentgen-ray appearance, which we look on as being characteristic. They are: In hydronephrosis, an obstructive lesion, there is enlargement of the pelvis and dilatation of the major and minor calices, giving a picture of expansion of the internal structure of the kidney. In polycystic kidneys, the picture is elongation, distortion and encroachment of the entire kidney pelvis and calices out of all proportion to any lesion one might suspect, and the reason for it is that the cysts begin in the parenchyma of the kidney, expand and get larger, so that in the process of development they displace the calices and push them aside and press on the pelvis and compress it. It has not been our experience to see hydronephrosis associated with polycystic disease. The picture is one of tremendous distortion and elongation of the kidney. In tumors there are two types: the pelvic tumor and the hypernephromas, in which there are filling defects. In tuberculosis it is now quite possible to diagnose almost all degrees, and the roentgenograms are typical. Tuberculosis begins in the parenchyma of the kidney as a small abscess and expands centrifugally until it erodes the outer margin of the minor calices, so that in the first stages little toothlike projections and deformities show on the outer surface of the minor calices. This is a very definite picture and if closely looked for and one is sure the kidney has been well filled, the diagnosis should be comparatively easy. When the kidney is

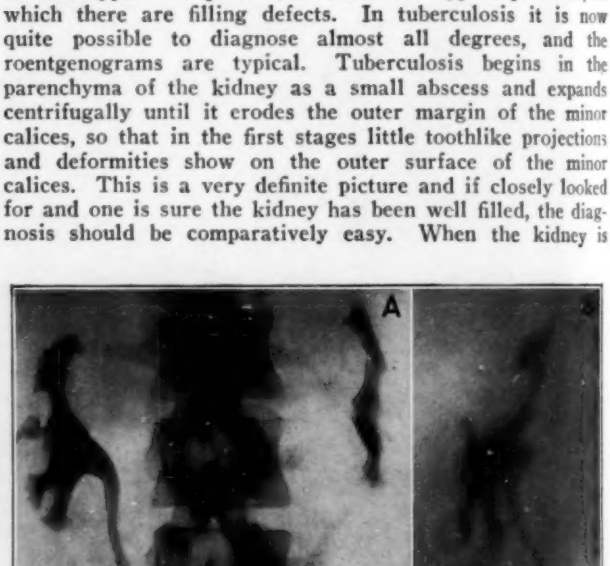


Fig. 6.—Pelves in faulty renal rotation: *A*, normal pyelogram (right) to be compared with that of opposite nonrotated side (seen on edge); *B*, pyelogram from congenital left solitary kidney with pelvis on ventral aspect of kidney.

incompletely filled, it is often necessary to repeat the pyelograms two or three times in order to arrive at a correct early diagnosis of tuberculosis. I was glad to hear Dr. Eisendrath mention the question of hemorrhages in the kidney producing pseudofilling defects. We have seen a number of such cases, and it is necessary in these cases to repeat the pyelograms. His technic for filling the ureter is the same as we have been using; namely, pulling the catheter down to the ureteral orifice and injection of more opaque solution. He neglected to bring out one point which we are doing a good deal now. We are making practically all of our pyelograms stereoscop-

ically. It is quite simple with the new roentgen-ray cystoscopic tables with the Potter-Bucky diaphragm, and we are also making lateral pyelograms. We have obtained information from lateral pyelograms that we are not able to get from stereoscopic pyelograms.

DR. SAMUEL BROWN, Cincinnati: Dr. Eisendrath says he will show a method by which he will differentiate between retroperitoneal and intraperitoneal tumors. In order to be able to do this, it is absolutely essential to be able to understand original anatomy. Even the roentgenologist ought to know surgical anatomy, but not the way we are accustomed to study the stomach and the intestines and the ureters, but also the anterior view and the lateral view.

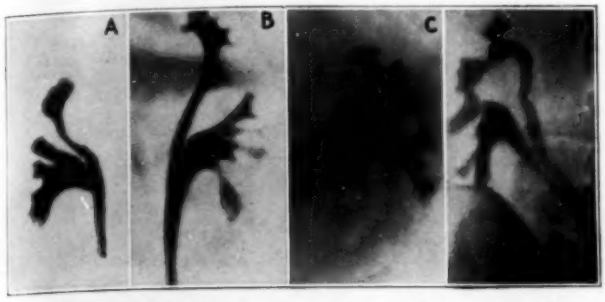


Fig. 7.—*A*, normal pelvis with long superior (cephalic) calix; *B*, same, but almost bifid pelvis; *C*, typical bifid pelvis; *D*, bifid pelvis with union of the two halves just beyond the renal hilum (incipient double kidney).

DR. WILLIAM F. BRAASCH, Rochester, Minn.: Dr. Eisendrath's paper illustrates the value of close cooperation between the roentgenologist and the urologist. I well remember, when I first became interested in this work fifteen years ago, the difficulty we had in arousing interest in the value of diagnosis of the abdominal tumors by means of pyelography. One reason was that we had to use mediums then which were followed by a marked reaction. The recent developments in urographic diagnosis of tumors of the kidney have been very interesting. They have consisted largely of refinements in diagnosis. In other words, where I formerly held that evidence of advanced pathologic changes must be shown in the pyelogram in order that a diagnosis of tumor could be made, we now recognize that minor changes in the outline of the pelvis and calices may be of the greatest value in their recognition. In cases of doubt it is advisable to call on other methods of clinical diagnosis and other cystoscopic data in order to determine the presence of a pathologic condition. However, the recognition of these minor changes may be difficult and they are easily confused with unusual types of normal pelvic outlines. The occlusion, the narrowing and tapering, or the evident elongation of a calix, questionable filling defect in the pelvis, possible spasm of the ureter, are all to be considered in the diagnosis of possible renal tumor. It may be particularly difficult to differentiate between the deformity caused by tumor and that of polycystic kidney. With polycystic kidney, however, all the calices are usually elongated, they are usually wider and the ends more tapering. With tumor, evidence of filling defect is more pronounced. The main point of differentiation, however, is that in the polycystic kidney there is deformity on both sides. I have never yet seen a case of true polycystic kidney without deformity in both pelves, while with neoplasm the deformity is seldom if ever bilateral. When the renal pelvis is occluded, differential diagnosis may be impossible by means of pyelography alone. When the pelvis is occluded by tumor, the outline at the ureteropelvic juncture will often be irregular and streaked. However, it may be difficult to differentiate tumor occlusion from that resulting from hydronephrosis, tuberculosis or atrophy without other cystoscopic and clinical data. Dr. Eisendrath has ably described this very valuable method of differential diagnosis of abdominal tumors, and I hope that his paper will influence clinicians to insist that in every doubtful abdominal tumor a pyelogram be made.

DR. P. M. HICKEY, Ann Arbor, Mich.: I should like to add two or three words about the lateral views of pyelograms which will bring out very nicely the pelvis and calices in cases in which the kidney is rotated. We found the lateral view of extreme value in the diagnosis of horseshoe kidney. I should also like to advocate taking the specimen as it comes from the operating room and repeating the pyelogram on the specimen. I think we get certain basic ideas by following out this procedure which will help us in the diagnosis of future cases. Where it is a question of a possible diagnosis of hypernephroma, it is important to supplement the examination by an exhaustive study of the osseous system because in a series of cases which we collected we found that there was quite a percentage of hypernephromas that showed bone metastasis.

DR. L. R. SANTÉ, St. Louis: There is one method which was not mentioned in the differentiation of retroperitoneal and abdominal tumors: pneumoperitoneum. About six years ago I described the so-called retroperitoneal position, to be used in connection with pneumoperitoneum for the differentiation between these two types of tumors. A patient into whose abdomen air has been injected is placed on the abdomen with a support under the chest and one under the thighs, so as to allow the abdomen to hang free. The stomach and intestines fall forward on the anterior abdominal wall and give a clear view, from side to side, of the retroperitoneal structure. At the top one sees a lateral view of the spine, the liver, spleen and all the abdominal organs with mesenteric attachment fall downward, affording a clear view of the retroperitoneal space. Any tumor of the retroperitoneal organs will bulge forward and encroach on the prevertebral clear space and will be at once evident. It will be seen in its size, its contour and its extent. We have found this method of great value in making this differentiation. The ureter is curved in retroperitoneal tumors, and that is a very helpful point, but it is not always present. I have seen it present when there was no retroperitoneal tumor, and I have seen it absent when there was a retroperitoneal tumor. The character of the tumor has a great deal to do with whether the sign is present. Where the involvement is of a diffuse type, one does not get the sign. If it is a globular type, such as is often the case with confined tumors, one does get this sign. If there is an actual tumor of the kidney that is confined to a small area and grows by multiplication and enlargement and in a spherical manner, the curved ureter is usually present. If, however, there is a perinephritic abscess where the tumor

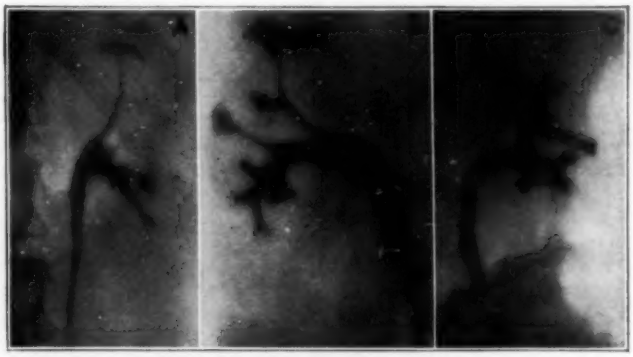


Fig. 8.—*A*, typical "pseudospider" pyelogram; *B*, case of hematuria due to chronic nephritis with superior calix arising from a horizontal pelvis; *C*, unusual pyelogram in case of chronic nephritis with severe unilateral hematuria, mistaken for neoplasms.

mass is diffuse and there is a collection of pus involving the entire area, then the sign often is not elicited. With pneumoperitoneum and the retroperitoneal position, one can make a differential diagnosis as to the position of the tumor. Pneumoperitoneum is not offered as a substitute for pyelography. It is offered only to aid in the occasional case in which the differentiation is the difficult problem.

DR. N. F. OCKERBLAD, Kansas City, Mo.: Dr. Eisendrath's paper has brought out some very important points, among which is the use of bilateral pyelograms. I see no objection to making bilateral pyelograms in certain selected cases, for

I have never seen any serious pain or trouble result from them. I have never seen a patient who had bilateral pain from a bilateral pyelogram, and the more pathologic the kidneys are, the less apt patients are to have reactions. We are now striving to diagnose urologic lesions still earlier. The early lesions are the important ones, for while they sometimes present the most baffling problems, they also offer the most hopeful prognosis. Another point that Dr. Eisendrath has made, and a very valuable one, is the pulling down of the catheter to make a ureterogram at the same time one makes the pyelogram. A stiff catheter, say a number 7, placed in the ureter will splint it and give the straight up-and-down effect on the plate, while with the catheter withdrawn, the ureter springs back to the original position. Some of the problems involved are tumors within the peritoneum. In one case a marked hydronephrosis was caused by an inoperable carcinoma of the gallbladder which was pressing on the ureter, producing dilatation of the pelvis of the kidney. In another case a large hydrops of the gallbladder was easily differentiated from a kidney lesion. In two other cases, a carcinoma of the sigmoid so interfered with the ureter that all the symptoms were referable to the genito-urinary system.

DR. DANIEL N. EISENDRATH, Chicago: Pneumoradiography is a very valuable procedure and an adjunct to pyelography, but unfortunately I am just in the same position that perhaps Dr. Braasch is in regarding pyelography. I have heard of some deaths after pneumoradiography and I want to try something safer. There is difficulty, at least in the hospital

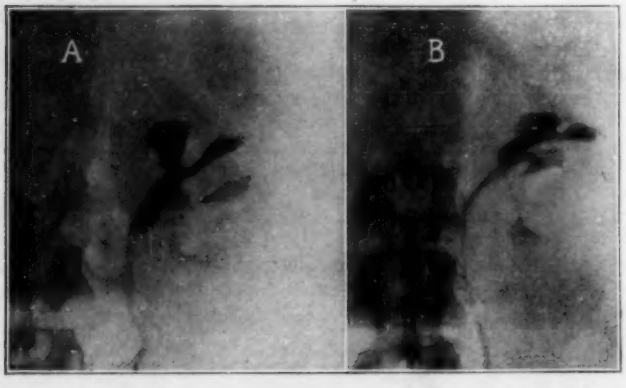


Fig. 9.—*A*, pyelographic deformity in renal tuberculosis complicated by perinephritic suppuration; *B*, same case six months later, just before nephrectomy.

in which I do the majority of my work, to induce the roentgenologist to cooperate with us to the extent of pneumoradiography. In regard to the point which Dr. Braasch made, team work between the urologist and the radiologist, and if necessary the internist, in making the diagnosis of abdominal lesions, I want to make a plea at this time not to send the cases to the urologist after one has not found anything in the intestinal canal. The technic of our bilateral pyelography is extremely simple. We try to use a number 5 catheter and Luer syringe. The two ureters are injected at the same time. We stop the moment we feel any pressure that comes from filling the renal pelvis up to a maximum, but one does not need to worry if one is using a number 5, 5½, or even a number 6 catheter. The excess of fluid flows back into the bladder. One does not need to worry about it. The second picture is made by pulling both catheters out and making the exposure at once. In that way it is not necessary to block the ureter at all. We get the most beautiful pictures up the entire length of the ureter.

Physical Training.—What is physical training? It is putting into use all parts of the body so that no one part shall be used at the expense of any other part, but so that all shall receive a sufficient amount of exercise to enable all the functions of the vital organs to be performed harmoniously and healthfully.—Posse: How Physical Training Affects the Welfare of the Nation, *Am. Phys. Ed. Rev.*, October, 1910, p. 494.

Clinical Notes, Suggestions and New Instruments

THE GIRDLESTONE SPLINT FOR BILATERAL DELTOID PARALYSIS

PHILIP LEWIN, M.D., CHICAGO

While I was visiting Mr. Girdlestone at Oxford, England, in June, 1925, he demonstrated a splint for use in bilateral deltoid paralysis, both as prophylactic and curative measures. He has not published the description and assents to the suggestion of the desirability of making it known so that it might have a suitable trial.

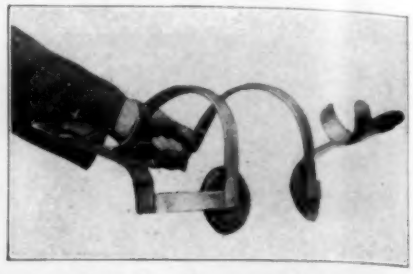


Fig. 1.—Girdlestone splint for bilateral paralysis.

The splint (fig. 1) is made of one-eighth inch duralumin[1] with sponge-rubber pads. It consists of six curved bands, and two straight bands each with a short right angled bend, one cross piece behind and four padded metal plates. It is self retaining and very light.

The patient (fig. 2) was a man, aged 25, born in the United States, a Rhodes scholar studying at Oxford. He was stricken with infantile paralysis in September, 1923, resulting in complete paralysis below the ninth dorsal segment, almost complete loss of the intercostals and neck muscles, except the platysma, and complete loss of both shoulders and upper arm. His hand muscles were weakened but not paralyzed.

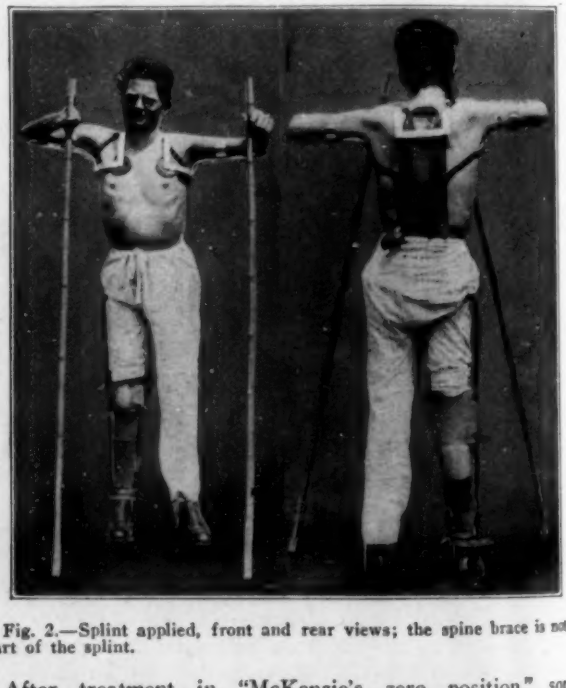


Fig. 2.—Splint applied, front and rear views; the spine brace is not a part of the splint.

After treatment in "McKenzie's zero position," some recovery of all muscles, except the abdominals and one triceps, was noted. Both deltoids remained weak. The apparatus enables him to walk without losing the abduction of his shoulders and without any pressure on the chest. Locomotion is possible by means of two long leg braces, a spine brace, a shoulder brace and two long bamboo sticks.

In commenting on the splint, Girdlestone said: "Its main characteristics are simplicity and lightness."

104 South Michigan Avenue.

1. The under-arm pieces are three-sixteenths inch thick.

COLLECTING RATTLESNAKE VENOM TO BE USED IN MAKING ANTIVENIN SERUM

MARTIN L. CRIMMINS, FORT SAM HOUSTON, TEXAS
Colonel, U. S. Army, Retired

This method of collecting venom of rattlesnakes is used at the San Antonio station of the Antivenin Institute of America, under personal instruction of Dr. Afriano do Amaral:

The stick used in snaring a rattlesnake is a wooden whip stock with an Ideal paper fastener number 1 in the end, with

Fig. 1.—Snaring the rattlesnake.

the forked end out, sunk in a slit an inch deep and wired in place. Two leather shoe laces are tied together to make a strap 5 feet long; one end is fastened to the end of the stick and is passed through the paper fastener, and a loop is pulled out and passed over the snake's head and is shaken until it stops behind the head. Figure 1 was taken while rattlesnakes were being collected in this manner; Dr. Afriano do Amaral is in the background. When the snare cannot be used, the snake is pinned to the ground, the fork of the paper fastener being used.

Fig. 2.—Holding the rattlesnake.

The snake is grasped behind the head with the left hand so that it cannot turn its head to bite the operator, and the head is then held over a petri dish. With the right thumb and forefinger, the venom glands are pressed, which causes the venom to be ejected through the fangs into the dish. The head should be tipped to the left and a glass pipet pressed behind the membranous sac and pushed forward. This elevates the fangs and presses out any venom in the sac. The venom dries rapidly, and about every ten minutes it is pipetted off from the petri dish and put into centrifuge tubes and plugged with cotton. Later it is dried in an incubator at 37 C. for from two to four days and becomes crystallized. The venom of *Crotalus atrox* is of an amber color. These amber crystals are then placed in a clean, dry bottle, labeled with the species of the snake and the date of extraction.

After the venom has been extracted, it is pipetted off and put into a centrifuge tube. Centrifugalization for from fifteen to thirty minutes at from 1,200 to 2,000 revolutions a minute divides the venom into four layers. The top layer is amber, the second is opalescent, the third is white saliva, and the fourth is composed of cells, etc. The upper two layers are removed, placed in an evaporating dish, and dried in an incubator as described above. This is the venom used for standardizing the dose to be inoculated into the horse. Two

Fig. 3.—Extracting the venom.

hundred Texas diamond-back rattlesnakes (*Crotalus atrox*) have produced about 2 ounces (60 cc.) of liquid venom which has been crystallized into 1 ounce (30 cc.). The venom is sent to Dr. T. S. Githens, Mulford Biological Laboratories, Glenolden, Pa. There are twenty horses there to be used in making the antivenin serum. The method of immunization of the horse parallels closely that used in diphtheria and tetanus.

FOREIGN BODY IN THE THYROID

WILLIAM L. WOLFSON, M.D., BROOKLYN
Associate Surgeon, Jewish and United Israel Zion Hospitals

Notwithstanding the voluminous literature on the thyroid gland, there are but two previously reported instances of a foreign body in that organ.[1] I here record an additional case.

REPORT OF CASE

L. G., a white woman, aged 58, born in Germany, admitted to the Jewish Hospital of Brooklyn, July 2, 1925, for about thirty-five years had had a goiter, which had been growing larger gradually until it had crowded the trachea over toward the left side. There was no dysphagia or dyspnea.

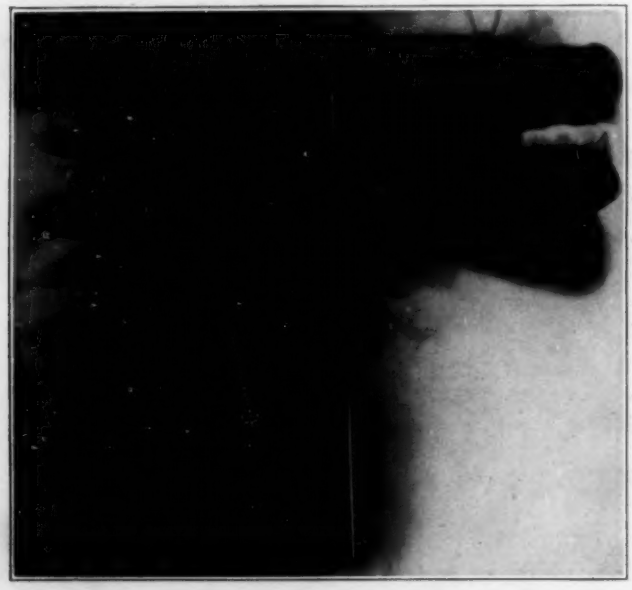
Her physician attempted to reduce the size of the gland by repeated injections of a solution of quinine urea hydrobromide. This treatment was continued two or three times a week for a period of about two years, and the goiter diminished to about one third its original size. However, as the injections were continued, it was noted that an increasing resistance was encountered in penetrating the gland, because of a fibrosis induced by the treatment.

On one occasion when receiving a treatment, the patient suddenly jerked her head, thereby causing the needle to break off deep in the gland. An immediate attempt under local anesthesia by the physician to recover the buried segment was unsuccessful. No untoward symptoms of any kind developed, and after a few weeks the aspiration and injection treatment was resumed.

Three months later, while the patient was convalescing from an attack of acute bronchitis with high temperature, the thy-

1. Baller, M.: Progrès méd. **32**: 347 (Oct. 20) 1917. Alamartine, H.: Ibid. **27**: 107 (Feb. 27) 1919.

roid began to increase in size. After three days the gland had grown so large as to cause difficulty in breathing. The attending physician, diagnosing an infection with abscess formation, incised the gland and evacuated a quantity of pus. For eight months thereafter, i. e., until the time of operation,



Needle in thyroid.

there was a continuous discharge of purulent material from a persistent sinus at the incisional site. During this time she frequently had irregular febrile exacerbations, and lost 28 pounds (13 Kg.).

The patient's previous history was irrelevant. She was moderately emaciated. The thyroid was enlarged, the right lobe being semiglobular and about 9 cm. in diameter, and from it a fistulous opening was discharging purulent material. The isthmus and left lobe were slightly enlarged. Roentgen-ray examination disclosed a needle fragment more than an inch in length in the soft tissues of the neck, lying almost transversely and running obliquely from before backward, at the level of the fifth cervical vertebra. The deepest point was about three-fourths inch behind its anterior end. The urine was normal. The white cells numbered 10,500, with 69 per cent polymorphonuclears and 31 per cent lymphocytes. The hemoglobin was 85 per cent.

Operation was performed, July 6, with local anesthesia. I packed the fistulous tract leading into the thyroid with a narrow strip of iodoform gauze. A low transverse collar incision was made. The muscles were separated in the median line and the thyroid capsule was exposed. The preglandular muscles on the right side were severed between clamps. The right upper and lower poles of the right lobe were isolated and ligated, and this lobe was resected, some thyroid tissue being left attached to the posterior capsule. The right lobe, wherein the needle was known to be embedded, was resected. Then the left lobe was resected. Closure was effected in the usual manner with the introduction of a rubber dam drain in the submuscular area.

Convalescence was relatively uneventful. On the day following operation, the patient was permitted to leave her bed. On the fourth day an infection of the wound and a slight discharge were observed, the latter continuing for three weeks. Thereafter the patient enjoyed good health: the wound healed entirely and the sinus tract closed. When the patient was seen in January, 1926 (five months after operation), she had gained 30 pounds (13.6 Kg.).

COMMENT

This case is reported because:

1. There have been few reported cases of foreign body in the thyroid.
2. It demonstrates the rapid and complete relief afforded by thyroidectomy, as compared with partial relief from prolonged injection treatment.
3. There is the element of risk due to needle breakage.
4. It is interesting as a case of acute thyroiditis following an attack of acute bronchitis, the thyroiditis occurring in a gland containing a presumably aseptic foreign body.

564 Ocean Avenue.

FATTY ATROPHY FROM INJECTIONS OF INSULIN

REPORT OF TWO CASES *

CLIFFORD J. BARBORKA, M.D., ROCHESTER, MINN.

Since January, 1922, when insulin was first injected into a patient with diabetes mellitus the medical profession has been alert to the appearance, either locally or systemically, of any deleterious effects from it. Pain from the injection of insulin is slight; otherwise children would not be so ready to give it to themselves. In the early period of insulin injections, sterile abscesses and superficial necrosis sometimes occurred, presumably because of impurities contained or of the preservatives used. However, with better preparations of insulin practically all untoward effects from injection have been eliminated.

I am reporting here two cases of unusual localized subcutaneous fatty atrophy at the sites of insulin injections which have been observed recently in the Mayo Clinic. I have been unable to find reports of such cases in the literature.

Fig. 1 (case 1).—Fatty atrophy of the left arm.

Fig. 2 (case 1).—Fatty atrophy of the left thigh.

REPORT OF CASES

CASE 1.—A woman, aged 34, was admitted to the clinic, April 22, 1926. The family history was negative except that a great-great-uncle had died from cancer of the lip, and a great-uncle had died from cancer of the stomach. The patient had two children living and well. Cholecystectomy and

* From the Division of Medicine, Mayo Clinic.

appendectomy had been performed nine years before her examination in the clinic. Diabetes mellitus had existed for four years, being controlled during the last year by 30 units of insulin daily, and a diet adequate for maintaining weight at a normal level. The patient came to the clinic to determine

Fig. 3 (case 2).—Fatty atrophy of both legs.

primarily the cause of certain depressed areas on the legs and left arm which had appeared gradually without pain, swelling or redness.

Nothing abnormal was revealed on physical examination other than the lesions mentioned. The blood Wassermann test was negative; the blood was chemically normal; the urine contained a trace of sugar, and the fasting blood sugar was elevated to 0.23 per cent. The depressed lesions varied in diameter from 2 to 7 cm. and from 1 to 3 cm. in depth. There were two lesions on the upper arm, four on the left thigh and two on the right thigh (figs. 1 and 2). There was no evidence either of recent or of old inflammation at any of these sites, and the overlying skin appeared to be healthy. There was no evidence of loss of substance or of weakness in the underlying muscle, or of any sensory or other neurologic disturbance, either at the site of the lesion or elsewhere. The abnormality consisted of disappearance of the subcutaneous fat in localized areas, the sites of previous insulin injections.

CASE 2.—A woman, aged 60, admitted to the clinic, June 5, 1926, had been married thirty-nine years, and had two children living and well. She had had pneumonia at the age of 20, but no other serious disease. Symptoms of diabetes mellitus appeared a year before her examination, and since then she had been giving herself daily doses of from 30 to 90 units of insulin. She had never learned to regulate her diet properly, and came to the clinic to be instructed with regard to this and the administration of the insulin. For the preceding six months she had noticed peculiar localized wasting of the fat of the legs at the sites of insulin injections.

On examination, glycosuria, hyperglycemia, mild retinal arteriosclerosis and lesions at the sites of insulin injections were noted (figs. 3 and 4). The lesions in this case were in every respect like those described in case 1. The patient was treated in the hospital and dismissed on a diet, and with a daily insulin requirement of 30 units.

COMMENT

In case 1 the patient came to us primarily to determine the nature of the depressed areas on the thighs and the left arm. In case 2, similar depressions were limited to the thighs. In case 1, insulin injections had been made in both thighs and the left arm. In case 2 they had been given only in the thighs. No such depressions were found elsewhere on the body in either case. Neither patient had received proper instructions in the technic of administering insulin, and one injection after another had been made in the same site. Neither patient suffered any particular pain or soreness from injections, and at no time had there been evidence of infection. In both cases the atrophy began about six months after the insulin injections were started.

It is well to emphasize that the desirable site for injecting insulin is where the skin is loose, and that succeeding injections should not be made at the same site. A fold of the skin should be picked up between the thumb and forefinger, and, with the syringe held parallel to the skin, the needle should be injected into the fold nearly up to the hilt. The tip of the needle should then feel loose in the soft tissue between the skin and the muscle. The insulin should be gradually forced from the syringe while the needle is withdrawn slowly, so that the injected fluid may be distributed as much as possible; the area should then be massaged in order still further to

Fig. 4 (case 2).—Fatty atrophy of the left leg.

distribute it. The patient in case 1 followed these instructions, and three months later there was no further atrophy of subcutaneous fat.

CONCLUSIONS

Localized atrophy of subcutaneous fat may occur at the site of repeated injections of insulin. By varying the site of injection frequently and taking pains to spread the injected fluid widely, it may be possible to avoid such lesions.

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SATURDAY, NOVEMBER 13, 1926

PARASITIC INFECTIONS IN CHINA

Geographic conditions and climate have long been recognized as exercising an important influence on the regional occurrence and transmission of diseases. Thus, it has become customary to refer to them under such classifications as tropical or subtropical disorders, in contrast with the maladies of the temperate and colder zones. In recent years the increasing ease of travel resulting in the actual migration of large numbers of persons, on the one hand, and the mingling of the members of many nations and races, on the other, in the armies and on the battlefields of Europe, have brought unanticipated changes in the incidence of many diseases in which an infectious agent is involved. At various times the unexpectedly wide recent distribution of intestinal parasites formerly associated with circumscribed areas of the globe has been referred to in The Journal.[1] One might almost assume that all the ancient barriers had been broken down by modern civilization, so as to lead to an approach to universality of all diseases. A reinvestigation of the changing problems involved from time to time therefore becomes desirable.

There are certain conditions of survival, however, that are largely independent of the human factor. Parasitologists[2] are wont to point out that parasites, like other organisms, are dependent on certain physical conditions of their environment in order to thrive. One of the most important limitations on the dispersal of a parasitic disease is the distribution of suitable hosts. Some parasites can live with apparently equal vigor in a large number of hosts; others are confined to a few or to one only. A double limitation is placed on parasites that require two hosts in order to complete their life history; they obviously cannot exist beyond the territory where the two hosts exist together. The local as well as the geographic distribution of the host is, of course, effective in limiting the distribution of the parasites. In the case of human parasites, the alternate host is practically the only limiting factor.

Some diseases are geographically limited by the distribution of certain insects that harbor the infective agent. Yellow fever, for example, does not extend beyond the range of its mosquito host. Temperature is an important limiting factor for those parasites which can be directly influenced by it, as external parasites and those which are nonparasitic during a part of their existence. Not only a suitable climate, involving temperature and humidity, but also the presence of suitable breeding places and of suitable haunts during resting times, must be necessary for the existence of certain dangerous external parasites. Even the soil conditions may alter the local distribution of the hookworm.

How such factors may affect the distribution of parasitic infections in China, a country of varied physiographic features as well as extremes of climate, has recently been pointed out by Faust,[3] the parasitologist of the Peking Union Medical College. The number of animal parasites of man in China is as large and the distribution is as extensive as in any other part of the world. The season of favorable temperature for the propagation of parasitic infections exists practically throughout the entire year in the Yangtze valley and to the south, except in the high mountain areas. To the north of the Yangtze valley the season corresponds to the period of rainfall. With these points in mind, Faust adds, it can be readily understood why many infections of clinical importance are confined to central and south China, while the significant diseases of north China are those that can survive drought and cold. Malaria and amebiasis are found throughout China; they are most extensive in the southern portions, whereas kala azar or visceral leishmaniasis is an important disease in the cold, semidry region of north China and Manchuria. Metazoan parasites, including intestinal worms, liver flukes and filarias, are dominant in the subtropical oriental region. In considering the unusual conditions prevailing in China, Faust has pointed out that the most usual method by which parasitic infections are dispersed is by pollution of water and of food with night soil. The economic system in China requires that human night soil be returned to the land. By this means, by the promiscuous defecation of man and of domestic animals serving as reservoir hosts, and by uncleanly personal habits, man has become infected and has perpetuated and increased the amount of the infection. Where the disease is not incurred by direct contamination, food products consumed raw serve as a via major for transmitting the infection to man. Under such circumstances, differences in the food habits of the different provinces or even climatologic differences serve to check infections that

1. Infestation with Flagellate Protoza, editorial, J. A. M. A. **82**: 1864 (June 7) 1924; The Prevalence of Intestinal Parasites, ibid. **84**: 985 (March 28) 1925; The Menace of Ascariasis, ibid. **86**: 629 (Feb. 27) 1926.

2. Chandler, A. C.: Animal Parasites and Human Disease, New York, 1922.

3. Faust, E. C.: Parasitic Infections and Human Disease in China, Arch. Path. & Lab. Med. **2**: 223 (Aug.) 1926.

would otherwise be widespread throughout the country. There is food for thought in the conclusion of Faust that nowhere else in the world is the investigator confronted with so extensive a country, having such extreme variations in humidity and temperature, with such a formidable group of parasites in man and reservoir hosts, and yet having a single race of people on which the effect of the variations of these factors may be studied. While the parasitic indexes of the populations of various districts in China have undoubtedly been modified from time to time, conditions as a whole, Faust concludes, are still essentially what they were two or three thousand years ago.

ACETALDEHYDE FORMATION IN THE BODY

There are emphatic reasons why the metabolism of the carbohydrates is of great concern in the consideration of the chemistry of physiologic processes. As Shaffer [1] has pointed out, much the larger part of the energy made use of by man and other animals to warm their bodies and to do muscular work is obtained by the oxidation of glucose and other simple sugars, derived from the digestion of various carbohydrates contained in the food. In the ordinary diets of human beings, from one half to two thirds or even more of the oxidizable foodstuffs are sugars and starches, which after digestion are absorbed from the intestine chiefly in the form of glucose. Fructose and galactose are also absorbed and utilized, though in much smaller quantities. Furthermore, the proteins are presumably potential sources of sugar in the organism; and, on the other hand, the carbohydrates unquestionably may function in promoting the storage of fat as well as of glycogen. It seems apparent, therefore, that the metabolism of glucose is one of the most important chemical reactions occurring in the body; and disturbances in this function become conspicuous through pathologic manifestations.

The carbohydrates are not burned up in the body through a simple process of combustion. The path of dextrose metabolism, as Shaffer has portrayed it, does not lie in its direct oxidation or in its direct synthesis to fatty acid, but the molecule first undergoes progressive conversion into other much more reactive substances, and it is these products resulting from molecular rearrangements which are finally oxidized with the liberation of energy, or are synthesized to fat and other substances. Biochemists are concerned in increasing measure with attempts to discover the intermediary stages of these changes and to recognize the substances involved. Lactic acid, methylglyoxal, pyruvic acid and acetaldehyde represent some of the possibilities that have been suggested. Knowledge of the details seems likely to throw some light on ketogenesis, which is notably related to disturbances of carbohydrate metabolism, and on the antiketogenic reactions of the organism.

Lactic acid, $CH_3.CHOH.COOH$, has long been the subject of investigation in this connection. Recently acetaldehyde, $CH_3.CHO$, has been identified by Stepp and his collaborators [2] as occurring in traces in the blood and urine of diabetic patients; and its presence in the urine of healthy persons has also been asserted.[3] According to the latest investigations of Supniewski [4] at the University of Toronto, acetaldehyde may actually arise in the tissues. He asserts that in the blood, and probably also in the organs, acetaldehyde exists partly in a free state and partly in the form of some unknown compound which yields acetaldehyde, but the quantities appear, from the approximate methods available for determination, to vary within fairly wide limits. Injection of sugar alone or possible intermediary products of carbohydrate metabolism seems to increase the acetaldehyde of the blood. Both the blood and the urine of depancreatized dogs contain more acetaldehyde than those of the normal animal, and insulin can restore the amounts to the normal level. This hyperacetaldemia in diabetes may have a significant connection with ketosis and lipemia, or with glyconeogenesis out of protein and fat. Thus another new outlook is afforded on the domain of intermediary carbohydrate metabolism.

THE SHAPES OF CELLS

About the middle of the seventeenth century, Robert Hooke [5] asserted that the cells in the shaft of a feather form "a kind of solid or hardened froth, or a congeries of very small bubbles." In the latter half of the nineteenth century Leo Errera wrote that cell walls "must correspond with such a lamellar system as one gets in pouring soap suds, beer, etc., from a narrow-necked bottle." Dieterich G. Kieser, in 1815, had already declared that "the higher plant consists of a mass of individual cells—cell tissue—and the cells then assume, through mutual pressure, a form determined by mathematical laws and consequently inevitable; namely, that of the rhombic dodecahedron." These twelve sided bodies Kieser considered to be truncate, with four hexagonal and eight quadrilateral surfaces, and he asserted that "the rhombic dodecahedron encloses the greatest space with the least extent of surface." William, Lord Kelvin, however, utilizing a method of studying soap bubbles originated by Plateau, came to a conclusion at variance with that of Kieser. Kelvin's experiments convinced him that space can be divided with minimal partitional area by the "orthic tetrakaidecahedron,"

1. Shaffer, P. A.: Intermediary Metabolism of Carbohydrates, Physiol. Rev. **3**: 394 (July) 1923.

2. Stepp, W.: Ueber das Vorkommen von aldehydartigen Substanzen im Blute von Kranken, Biochem. Ztschr. **107**: 60, 1920. Stepp, W., and Lange, H.: Ueber das Vorkommen von aldehydartigen Substanzen im Harne bei Diabetes mellitus, Deutsches Arch. f. klin. Med. **134**: 47, 1920.

3. Stepp, W.; Rothman, F., and Manheim, I.: Biochem. Ztschr. **146**: 349, 1924.

4. Supniewski, J. V.: The Influence of Insulin on the Acetaldehyde Formation in the Body of Animals, J. Biol. Chem. **70**: 13 (Sept.) 1926.

5. Hooke, Robert, cited by Lewis, F. T.: The Typical Shape of Polyhedral Cells in Vegetable Parenchyma and the Restoration of that Shape Following Cell Division, Proc. Am. Acad. Arts & Sc. **58**: 538 (June) 1923.

which, as its name indicates, has fourteen surfaces, six of which are quadrilateral and eight hexagonal.

It would be interesting and might prove of practical importance to know how massed biologic cells correspond to this economy of space. To solve, finally, the problem of the shapes of cells, Dr. Frederic T. Lewis selected for study the pith of elder, *Sambucus canadensis*. He embedded fresh moist specimens in paraffin, cut them in perfect serial sections of 10 microns in thickness, and built reconstructions of cells from longitudinal sections. These selected cells were enlarged to 500 diameters and models were constructed in wax. To be sure, intercellular spaces cause blunting of the angles, and the walls are frequently wavy. Probably none of the cells have the form of the regular geometric figure described by Lord Kelvin. The average number of contacts of 100 cells, however, Lewis found to be 13.96. "A contact is always a potential facet," and usually the facet is actually there.

Interesting as these results may be, the pith of elder, which every country boy has pushed out from its stem, obviously is quite a different material from animal tissue. Two years after his paper on the cells of elder pith, Lewis published his observations on the cells of tissue from the subcutaneous fat of the human abdominal wall.[6] A procedure similar to that employed in the previous study demonstrated that the average number of surfaces of 100 cells of adipose tissue was 14.01. This figure is again consistent with the tetrakaidecahedral form. Further work by the same investigator was expended on other animal and vegetable cell types, with the result that "it may now be said that such diverse types of cells as those of fat and of rushes, epidermal cells and parenchymal cells of elder pith are all primarily tetrakaidecahedral. Until it has been shown that any cells in other aggregates are of some different form, this becomes a general conclusion."

Current Comment

EDUCATING THE PUBLIC—A NEW VENTURE

Representative of the newer efforts of organized scientific medicine to educate the public is the venture of the Toledo Academy of Medicine in promoting for that city a "Hearty Health for Women" week. A lecture was given each evening from November 8 through November 12 on topics of interest to women from the health point of view. These were made possible through the cooperative efforts of the Toledo Academy of Medicine, Toledo Public Health Association and the Ohio State Department of Health. The executive board included representatives of every important woman's organization in the city of Toledo, as well as of every member of the Toledo press. The lectures, which were designed particularly for women's interest, included "Changing Modes and Manners," by Dr. R. S. Dixon, Detroit; "The Health of Our Mothers," by Dr. F. S. Mowry, Cleveland; "Milestones in the Development and Care of the Child," by Dr. William M. Champion, Cleveland; "Examination of the School Child," by Dr. Don W. Gudakunst, Detroit, and "More Abundant Health in Middle Life," by Dr. J. H. J. Upham, Columbus. Each lecture was followed by a question period of fifteen minutes. More and more cooperative efforts of this character are bringing the intelligent public to a realization of the good faith with which scientific medicine is approaching this newly developing task. The "Principles of Medical Ethics" wisely say, "Physicians, especially those engaged in public health work, should enlighten the public regarding quarantine regulations; on the location, arrangement and dietaries of hospitals, asylums, schools, prisons and similar institutions; and concerning measures for the prevention of epidemic and contagious diseases. . . . Physicians should warn the public against the devices practiced and the false pretensions made by charlatans which may cause injury to health and loss of life." In developing its plan for intensive education of the women of the community, the Toledo Academy of Medicine renders a great service to the public and fulfils its obligations as an efficient unit in medical organization.

THE PHYSICIAN: ARTISAN OR ARTIST?

Many features of medical practice have become so highly "standardized" that an occasional note of reaction develops against the seeming subjugation of the practitioner as an individual to an impersonal routine of daily duties. True, convention and convenience have dictated the form in which certain professional procedures are conducted. Vaccination, the Schick test, the Dick test, goiter prophylaxis, the injection of "units" of this or that serum or hormone as indicated by some especial reaction or laboratory report—these and half a hundred other measures represent some of the physician's activities that perhaps call for assiduity and faithfulness rather than any unique professional skill. Considerations of this sort sometimes lead to an impression that medical practice is becoming in large measure a machine-like performance which less highly trained or less well rewarded persons might qualify for with success. It is analogous to the oft mentioned contrast of the artist with the artisan. It may not be amiss, therefore, to disabuse the untutored mind of misconceptions regarding both the opportunities and the problems calling for extreme resourcefulness and the highest intellectual preparedness and acumen that daily confront physicians. The uncertainties of recognized diseases are legion; the unexpected and obscure offer a challenge for the utmost intellectual endeavor as well as technical proficiency. One need merely scan the contents of THE JOURNAL from issue to issue in order to find cogent illustrations of this statement. Thus, as reported recently,[1] a group of seventeen children was suddenly seized with an illness of extreme obscurity. All recovered through the advantage of medical attention, and the cause of the attacks

6. Lewis, F. T.: A Further Study of the Polyhedral Shapes of Cells, Proc. Am. Acad. Arts & Sc. **61**: 1 (Dec.) 1925.

1. Gompertz, L. M.: Poisoning with Water Hemlock (Cicuta Maculata), J. A. M. A. **87**: 1277 (Oct. 16) 1926.

was discovered in water hemlock (*Cicuta maculata*) which had been unsuspectingly eaten by the youngsters at play. Poison ivy forms a similar public menace that demands attention because of its unsuspected presence. The intoxication may readily be aggravated by improper diagnosis and mistaken treatment. The physician's versatility and wisdom are thus requisitioned. The same issue of THE JOURNAL[2] records the correct diagnosis and successful treatment of unexpected cases of undulant fever due to human infection with *Brucella abortus*, the micro-organism responsible for bovine infectious abortion, under conditions that called for medical talent of a high order. No words can testify more eloquently than such modestly presented records, typical of the day's work, of the importance of proper training for the daily tasks of the physician. When real tests of a medical caliber arise, the cults and isms, the healing sects and systems fail. Scientific medicine of today stands as the heir of all that has preceded it since men began to heal. Routine and drudgery will not dull the professional spirit. As Lee has expressed it, all that medicine acquires it puts to the rigid, critical test of experiment, and it discards all that which does not stand this test. It thus represents a great body of selected scientific knowledge, which is the best that science can offer today. Tomorrow its knowledge will be more abundant and more exact, and, as science continually advances, medical science will keep pace. Its followers, Lee adds, are terribly in earnest in their warfare against disease. Like the intrepid Ulysses, they are

> . . . strong in will
> To strive, to seek, to find, and not to yield.

THE QUARTERLY CUMULATIVE INDEX MEDICUS

Efforts of the last two years have just culminated in an agreement whereby the *Index Medicus*, published since 1879 under various auspices, and the *Quarterly Cumulative Index*, published since 1916 by the American Medical Association, will be combined and issued as a single publication to be known as the *Quarterly Cumulative Index Medicus*. The new bibliographic principles, including primarily classification of subjects and authors in one alphabet, which have been significant features of the *Quarterly Cumulative Index*, will be maintained in the new publication. It will, moreover, include the extensive bibliographic material of the library of the Surgeon-General's Office in Washington, D. C., covering, instead of the three hundred significant periodicals to which the *Quarterly Cumulative Index* was formerly limited, practically the entire medical literature of the world. The publication will be printed on the presses of the American Medical Association. The Carnegie Institution, which has in recent years supported the *Index Medicus*, will bear a portion of the expense. The first issue of the new periodical will appear in April, 1927, and will cover the literature received during the first three months of that year. Additional announcements concerning this venture will be made as the practical aspects of the matter develop. All those who have taken part in the negotiations leading to this successful culmination are convinced that the amalgamation represents a real advance in medical bibliography, and that the new *Quarterly Cumulative Index Medicus* will be of the greatest importance in aiding the progress of medical research and practice.

2. Carpenter, C. M., and Merriam, H. E.: Undulant Fever from Brucella Abortus, J. A. M. A. **87**: 1269 (Oct. 16) 1926.

THE CHIROPRACTOR IN LITERATURE

The physician has long been an important character in the works of the greatest novelists. "Lydgate" of George Eliot, "Bovary" of Flaubert, "Kennicott" of Sinclair Lewis, and the doctors created by McLaren, Holmes, Doyle, Howells and Maugham come promptly to mind. As far as can be reasonably ascertained, apparently the first attempt to weave into recognized fiction a perfect chiropractor is the introduction of "Dr. Pell" by Dorothy Canfield in her most recent novel, "Her Son's Wife." The contrast to Pell, the chiropractor, is Dr. Dewey, general practitioner of the small community, as fine a medical character as has marked any of the writings previously mentioned. It is, however, the insight with which Pell is dissected for the reader's benefit that makes the new Canfield novel particularly significant to the medical reader. The diagnostic scene with the typical chiropractic diagnosis of one little corner of a bone slipping past another, the use by the chiropractor of queer combinations of near-medical words, and the description of the unending chiropractic treatments with violet lights, "automatic oscillation" and "personal psychomanipulation" are at once a matter for amusement and pity. Such delicate touches as "He always lowered the window shades before beginning the treatment, and lowered his voice too" and "Do you feel the rays penetrating the flesh?" are an indication of the detailed study that has been given to the matter by the author. The book reveals, besides, an excellent story of the development and education of a child under difficult circumstances; it is well worth the time of even the most serious reader.

Death Rate from Tuberculosis Decreasing.—Lower death rates from tuberculosis (all forms) were registered in 1924 than in 1900, for each age period for both sexes, in the registration states of 1900, as shown by figures recently issued by the Department of Commerce. The amount of this decline in death rates ranged from 73 per cent for females under 1 year of age to 37 per cent for females aged 15 to 19 years. This decline in tuberculosis death rates is not limited to the United States. Similar declines are recorded in the death rates of England and Wales. A comparison of the 1924 death rates from tuberculosis (all forms) for England and Wales with the corresponding 1924 rates for the United States registration states of 1900 reveals lower rates in the United States for each age period up to age 55 for each sex. The greatest per cent difference up to age 55 was for males aged 5 to 9 years, the respective rates for the two countries being 37 for England and Wales and 15 for the United States, the latter rate being 59 per cent lower than the rate for England and Wales. . . . Comparisons of the tuberculosis death rates for the two countries for ages above 55 show much lower rates in England and Wales than in this country, so much lower in fact that apparently the only explanation is a tendency in England and Wales to certify at the older ages bronchitis as the cause of death, instead of tuberculosis.—*Pub. Health Rep.* **41**:2233 (Oct. 15) 1926.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Personal.—Henry M. Knower, Ph.D., has been appointed to the faculty of the department of anatomy of the University of Alabama School of Medicine.—Dr. Filip A. Forsbeck, Montgomery, has been appointed state epidemiologist for Massachusetts, effective November 1.

Superintendent Appointed.—Dr. L. O. Davenport has been appointed superintendent of the Jefferson Tuberculosis Sanitarium, Birmingham, to succeed the late Dr. William H. Cryer. Dr. Davenport was formerly connected with the Union Printers Home and Tuberculosis Sanitarium, Colorado Springs.

Society News.—Dr. James E. Leach addressed the Etowah County Medical Society, Gadsden, recently, on "Bronchial Asthma."——The Northeastern District of the State Medical Association, comprising sixteen counties, held a meeting at Talladega, recently, which was open to the public; after the scientific session there was a barbecue.——Dr. Jacob S. Ullman, Natchez, Miss., addressed the Jefferson County Medical Society, Birmingham, October 4, on "Carcinoma of the Cervix Uteri."

CALIFORNIA

Personal.—Dr. William S. Mortensen is the superintendent of the new Santa Monica Hospital, Santa Monica, which will soon be completed.——Dr. Norman R. Sullivan has been elected city health officer of Santa Cruz to succeed Dr. Edgar B. Philbrook, resigned.

Hospital Amalgamation.—The Clara Barton and the Hollywood Hospital united, recently, the former moving to the Hollywood Hospital. The new organization will be known as the Hollywood Clara Barton Memorial Hospital. The new wing, which is being constructed to the Hollywood Hospital and which will add 150 beds will be completed in the spring of next year.

Health at San Diego.—Telegraphic reports to the U. S. Department of Commerce for the week ending October 30, from sixty-five cities with a total population of about 29,000,000, indicated that the highest mortality rate (22.8) was at San Diego, and that the mortality rate for the group of cities was 12.2. The mortality rate for San Diego for the corresponding week last year was 13.8, and for the group of cities, 12.5.

Society News.—Dr. Albert Soiland addressed the Los Angeles County Medical Association, November 4, on "Use of Colloidal Lead in Conjunction with Radiation in the Treatment of Cancer."——The second annual clinic day in all the Los Angeles hospitals will be held November 18. There will be a banquet at the Elks Club, 6:30 p. m., $2.50 a plate; all physicians are invited.——Medical officers who were in training at Camp Greenleaf, Fort Oglethorpe, Ga., during the World War will hold a reunion and dinner, Armistice night at the City Club, 833 South Spring Street, Los Angeles, at 6 p. m.; tickets, $1.50. The Fort Riley medical officers, and all other medical officers who served in the World War, are cordially invited to join in the celebration. Reservations can be made through Major Sydney V. Kibby, Methodist Hospital Clinic, 2826 South Hope Street, or Capt. John C. Copeland, 301 Story Building.

ILLINOIS

Illegal Practitioner Arrested.—Francis J. Doherty, 1032 Dobson Street, Evanston, a naprapath, was arrested, October 14, it is reported, on a charge of violating the state medical practice act.

Radiological Review Becomes a Monthly.—The *Radiological Review*, which has been published bimonthly at Quincy, will be published monthly beginning January, 1927, and the number of its pages will be increased from thirty-two to sixty-four.

Personal.—Dr. Anny Maria Peterson Saunders is now acting director of the state psychopathic institute for research and laboratory work.——Dr. Margaret H. Nelson has been appointed physician and health adviser at the state college at Normal; Dr. Nelson formerly practiced at Des Moines, Iowa.——Dr. John P. Denby, Carlinville, has been reelected president of the Illinois Tuberculosis and Public Health Association; Drs. Elmer B. Coolley, Danville, and William Marshall, Dixon, were reelected vice presidents; the attendance at this meeting was the largest in years, and included, among others, about 100 physicians.——Dr. John F. Lewis, for twelve years chief physician at the Mineral Point zinc plant, DePue, has resigned.

Society News.—At the fiftieth annual meeting of the Central Illinois Medical Society, Pana, October 27, Dr. Theo. Thompson, Shelbyville, was elected president, and Dr. Franklin A. Martin, Pana, secretary-treasurer.——Dr. Mitchell M. Sellett, La Salle, addressed the seventy-fourth annual meeting of the La Salle County Medical Society, Streator, October 26, on "Chronic Focal Infection of the Eye, Nose and Throat"; Dr. Philip H. Kreuscher, Chicago, spoke on "Backache," and Dr. Gustaff H. Mundt, Chicago, president-elect of the state medical society, on "Relation of Eye, Ear, Nose and Throat to General Practice."——Dr. Harold Swanberg, Quincy, addressed the Fulton County Medical Society, October 5, at Canton, on "Radium Therapy."

Chicago

Child Guidance Center.—After a period of reorganization, the Lower North Child Guidance Center opened, October 20, under the direction of the Institute of Juvenile Research at the Lower North Community Council, 1120 North Clark Street. Appointments for the examination of children may be made through the secretary of the council, Lincoln 1132.

Deaf Mute Driver in Auto Collision.—A deaf mute was seriously injured, November 6, it is reported, when the automobile which he was driving was overturned in a collision at Ashland and Diversy Avenues. Four other persons in this car were not injured. Two deaths due to automobile accidents, November 7, raised the total number in Cook County, since January 1, to 759.

Hospital News.—The central office of the City of Chicago Municipal Tuberculosis Sanitarium is now at 2049 West Washington Boulevard; telephone Seeley 4110. Construction has been started on a new $500,000 addition to the sanatorium, Crawford and Bryn Mawr avenues, the capacity of which will be 225 beds, giving the institution a total capacity, it is reported, of about 1,200 beds.——The cornerstone of the Chicago Memorial Hospital, to be erected at Thirty-Third Street and the lake, in Groveland Park, was laid with appropriate ceremony, November 3.

Liquor Licenses Revoked.—The local prohibition administrator recently issued orders revoking the licenses of the following, it is reported, for the reasons indicated:

Dr. Benoin A. Bullock, failed to keep proper records. Diversion. Issued prescriptions unlawfully.
Dr. Emmet F. Casey, failed to keep proper records. Issued prescriptions unlawfully. Diversion.
Dr. Joseph J. Nimschik, failed to keep proper records. Diversion. Issued prescriptions unlawfully.
Dr. James J. Walsh, failed to keep proper records. Unlawfully issued prescriptions.
Dr. Isidor Walter, failed to keep proper records. Diversion.

Scientific Study of Human Behavior.—Friends of the Institute for Juvenile Research, with the assistance of the public, have provided a Behavior Research Fund for the purpose of scientific study of human behavior for a period of five years. The following appointments to the Behavior Research staff have been announced:

Dr. Herman M. Adler, director.
Dr. Horace Gray, Boston, endocrinologist.
Prof. Gustav. A. Jaederholm, Ph.D., University of Gothenburg, Sweden, research psychologist.
Ethel Kawin, M.A., research psychologist.
Prof. Karl S. Lashley, Ph.D., University of Minnesota, research psychologist (comparative psychology).
Prof. Louis L. Thurstone, Ph.D., University of Chicago, research psychologist.
Claude Shaw, Ph.D., University of Chicago, research sociologist.
John C. Weigel, administrator.

Society News.—Dr. Lloyd L. Arnold delivered the presidential address before the Chicago Pathological Society, John Crerar Library, November 8, on "The Normal Bacterial Mechanism of the Gastro-Intestinal Tract." Dr. Oscar T. Schultz read a paper on "Riedel's Struma of the Thyroid."——Dr. Karl K. Koessler will address the Chicago Medical Society, November 17, on "The Newer Aspects of Pernicious Anemia"; Dr. Frederick Tice will open the discussion; Dr. Karl A. Meyer will give an address on "Acute Intestinal Obstruction" and Dr. William Cubbins will open the discus-

sion; Dr. Royal Whitman, New York, will be the guest of the society, December 1, and the University of Illinois will furnish the program, December 8.——Representatives of the School Tuberculosis Physicians Association addressed the Chicago Tuberculosis Society, November 11, at the Brevoort Hotel.

KENTUCKY

Hospital News.—The James Clark University of the Baptist Medical Missionary Society has purchased 100 acres of land on the Shelbyville Road near Louisville as a site for a new sanatorium and training school for missionary nurses.

Personal.—Dr. Robert Lee Bird has been reelected president of the medical staff of the Booth Memorial Hospital, Covington.——Dr. Levi S. Siler has been elected chairman of the board of health of Corbin.——Dr. James E. Rush, of the hygienic department of the University of Kentucky, Lexington, has been elected a trustee of the Good Samaritan Hospital.

Outbreak of Diphtheria.—An outbreak of nineteen cases of diphtheria in Owensboro and Daviess County was reported, October 12. Dr. Arthur T. McCormack, secretary, state board of health, requested the local health officers to appeal to the public for cooperation to the fullest extent in preventing the further spread of the disease, and to urge parents to have their family physicians immunize their children by means of toxin-antitoxin.

MARYLAND

Dr. Welch Accepts Chair of History of Medicine.—Dr. William H. Welch, since 1916 director of the School of Hygiene and Public Health, Johns Hopkins University, Baltimore, has resigned that position, it is reported, to accept a professorship in the history of medicine at Johns Hopkins. This is said to be the first full-time chair of its kind in this country, and was made possible by a grant of $200,000 from the General Education Board of the Rockefeller Foundation, New York.

Hospital News.—The Hospital for Women of Maryland, Baltimore, plans to erect a $300,000 addition on a 50 foot frontage on Mosher Street, which will be connected with the main hospital building by a bridge. The addition will be reserved partly for the treatment of children, and it provides accommodations for about sixty additional patients.——The board of estimates of Baltimore has bought property at 1516 Madison Avenue for a new child welfare clinic to be established by the city.

Dr. Abel Honored.—At the recent half century celebration of Johns Hopkins University, a dinner was given in honor of Dr. John J. Abel, professor of pharmacology, by his former pupils and other contributors to a "Festschrift" published in his honor. On this occasion took place the formal presentation of a morocco bound copy of the volume, which had been issued as volume 29 of the *Journal of Pharmacology and Experimental Therapeutics* which Dr. Abel founded in 1909, and which he continues to edit. Among the contributors to the volume are some of the leading scientists in Europe and the United States. Many congratulatory telegrams and cables were received from friends in this country and in Europe.

MASSACHUSETTS

Cutter Lecture.—Prof. Friedrich Neufeld, Robert Koch Institute for Infectious Diseases, Berlin, gave the Cutter Lecture on Preventive Medicine at Harvard Medical School, November 3; Professor Neufeld's subject was "Immunity in Its Significance to Epidemiology."

Reception for Harvard Students.—The annual reception, sponsored by the Phillips Brooks Association of Cambridge for medical students, was held at Harvard Medical School, October 4. The students were welcomed by the president of the university, A. Lawrence Lowell, and by the acting dean of the medical school, Dr. Walter B. Cannon. A get-together meeting followed the addresses. The registration of medical students this year includes 125 freshmen, 113 sophomores, 134 juniors and 134 seniors. About 20 per cent of the last two classes have transferred from other medical schools throughout the country.

Society News.—Dr. Richard C. Cabot, Boston, addressed the second annual meeting of the Trudeau Society at the medical library, November 11, on "Tuberculosis from the Standpoint of Clinic and Autopsy."——The first meeting of the Greater Boston Medical Society was addressed by Dr. Joseph C. Aub, assistant professor of medicine, Harvard Medical School, October 6, on "Advances in the Knowledge of the Glands of Internal Secretion."——At the third annual meeting of the Massachusetts Psychiatric Society, Hotel Somerset, October 21, Prof. Francis B. Sayre, Harvard Law School, gave the annual address; his subject was "Siam."

MICHIGAN

Personal.—Dr. William E. McNamara has been elected chief of staff of St. Lawrence Hospital, Lansing, for the ensuing year, and Dr. L. Colman Ludlum, secretary.——Dr. Walter C. Reineking has tendered his resignation as superintendent and medical director of the Muskegon County Tuberculosis Sanitarium, Muskegon.

Detroit Diphtheria.—There were 123 cases of diphtheria reported to the Detroit Department of Health in the week ending October 23; the norm was seventy-two. During the previous week, there were 125 cases reported. The department has set up twenty-one stations in the city where children may be immunized with toxin-antitoxin, and during the first two weeks of the campaign, there were 23,000 children who started their immunization, while only 5,409 started during the week of this report. The health department urges that parents avail themselves of this opportunity to protect their children as the disease will be most prevalent during December, January and February. Should the incidence continue at the present rate, there will be 2,100 cases of diphtheria in that time, and 315 of them will be fatal. During October, there were 552 cases of diphtheria among Detroit children; fifty-five of them died.

Society News.—Dr. Eugene Hart was elected president at the annual meeting of the Clinton County Medical Society, St. Johns, October 7; Dr. Harry D. Squair, vice president, and Dr. Tun Y. Ho, secretary. Dr. Carl E. Badgely, University Hospital, Ann Arbor, among others, addressed the society on "Fractures."——A subscription dinner was given at the Wayne County Medical Society Auditorium, October 27, for Dr. Wendell C. Phillips, New York, President, American Medical Association, who addressed the society that evening.——Dr. Benjamin S. Gutelius, Norway, was elected president of the Dickinson-Iron County Medical Society in September, and Dr. William H. Alexander, Iron Mountain, secretary.——Dr. David J. Levy addressed the Detroit Pediatric Society, November 1, at the Children's Hospital on "Prophylaxis of Heart Disease in Children," and Drs. Charles A. Wilson, Ross L. Zimmerman and Richard C. Connelly, "Prognosis of Heart Disease in Children." The officers for the society for the ensuing year are: president, Dr. Thomas B. Cooley, vice president, Dr. Russell S. Rowland, and secretary, Dr. William S. O'Donnell.

MINNESOTA

Hospital News.—According to *Minnesota Medicine*, the Children's Clinic of Minneapolis which has been located at the Abbott Hospital for the last six years has ceased to exist.

Personal.—A reception was given by the citizens of Rush City and the surrounding country, recently, in honor of Dr. Alvah J. Stowe on the occasion of his retirement from the practice of medicine at the age of 68.

Dr. Hargis Awarded Foreign Scholarship.—The medical graduate committee, board of governors, Mayo Foundation, has awarded the J. William White scholarship for the study of surgery in foreign countries to Dr. Estes H. Hargis for conspicuously meritorious work during his fellowship in the Mayo Foundation. Dr. Hargis, the first recipient of the award, is a graduate of the University of Pennsylvania, and he entered the Mayo Foundation as a fellow in surgery, July, 1923. He will probably sail for Europe early in 1927.

MISSISSIPPI

Health Officers Meeting.—The annual health officers' conference met in Jackson, October 21-22. Among others, the following subjects were discussed:

"Shellfish Sanitation"—H. A. Kroeze, Jackson.
"Feasibility of an Intensive Excreta Disposal Campaign in Municipalities"—John M. Kittrell, Laurel.
"Value of Newspaper Publicity to a Health Program"—Sylvan Myers, Vicksburg.
"Relationship Between the Central Organization and County Health Departments and Between the Health Officer and the Physician"—Felix J. Underwood, Jackson.
Address—Arthur T. McCormack, state board of health, Louisville, Ky.
"Financing County Health Departments"—Daniel J. Williams, Gulfport.

Society News.—Dr. Theophilus E. Ross, Sr., president of the state medical association, has appointed a commission of ten to cooperate with the Medical Society of Virginia to raise funds to purchase and repair the birthplace of Walter Reed, and establish a chair for research in his memory at the University of Virginia.——The East Mississippi Medical Society met, October 7, at Philadelphia, Miss., and was addressed, among others, by Dr. Franklin G. Riley on "Treatment of Scarlet Fever with Streptococcus Antitoxin"; Dr. George W. Bounds, "Diagnosis and Treatment of Diseases of the Antrum," and Dr. T. D. Bordeaux on "Importance of Early Diagnosis of Tuberculosis."——The Homochitto Valley Medical Society met at Natchez, October 7, and elected Dr. William R. Brumfield, Gloster, president, and Dr. Lucien S. Gaudet, secretary-treasurer. The next meeting will be Jan. 13, 1927.——The North Mississippi Medical Society met at Aberdeen, September 21, and following the scientific program held a banquet at which "one of the most delightful social entertainments in the history of the society was given."

MISSOURI

University News.—The stadium and tower, erected at the University of Missouri, Columbia, in honor of students who died in the World War, will be dedicated November 20. The occasion will be a homecoming; there will be a football game between Kansas and Missouri as a feature of the entertainment.——A portrait of Dr. John B. Shapleigh was unveiled, November 10, at Washington University School of Medicine, St. Louis. Dr. Shapleigh for many years was professor of otology, and for one year was dean of the faculty.

Amendments Proposed to Medical Practice Act.—The Missouri State Medical Association has prepared amendments to the medical practice act for introduction to the next session of the legislature which convenes in January. The amendments provide:

1. For the initiation by state board of health of proceedings against violators of the law.
2. For the acceptance of the certificate of the National Board of Medical Examiners.
3. That applicants for license show evidence that they attended throughout four terms of nine months each, and received a diploma from some reputable medical school that enforces the four term requirements.
4. For exemption of persons who endeavor to cure disease by spiritual means or prayer.

University Raises Requirements for Admission.—The board of curators of the University of Missouri approved a recommendation of the faculty of medicine, October 30, fixing the requirement for admission to the medical school at three years of art work with the same specific subject requirements as now exist. The change becomes effective in the fall of 1928. Candidates for the A.B. degree in the combined course of arts and medicine will receive the degree on completion of the first year of the medical curriculum following the completion of three years of arts work. The school will continue to offer the degree of bachelor of science in medicine to those who complete the two year curriculum under the present provisions.

Society News.—Dr. John Zahorsky and Mary A. McLoon reported three cases of giardiasis in children before the St. Louis Medical Society, September 28, and the discussion of the paper was opened by Dr. William M. Marriott; Dr. Rutherford B. H. Gradwohl addressed the society on "Practical Method of Identification of the Gonococcus by Culture," and Dr. John R. Vaughan opened the discussion. ——Dr. Leland B. Alford addressed the St. Louis Medical Society, October 12, on "Discussion of the Nature of Epilepsy." ——Among the guest speakers at the fiftieth annual meeting of the Southeast Missouri Medical Association, Cape Girardeau, October 12-13, were Drs. Allen A. Nickel, Rochester, Minn., Neil S. Moore, William D. Black and Eugene L. Myers, all of St. Louis.

NEW MEXICO

Births Attended by Physicians.—The state health department has completed a count of the birth certificates for 1925 to determine the number of births attended by physicians and midwives. It was found that physicians attended 60 per cent of the live births and that women signing themselves as midwives attended about 22 per cent. The term "midwife" has not been satisfactorily defined in New Mexico, and some who so designate themselves are not actually practicing midwifery. There were 311 stillbirths in New Mexico in 1925, and physicians were in attendance at 80 per cent of these. This indicates, it is said, that physicians were called in many of the complicated cases of labor.

NEW YORK

Nineteen Deaths in Typhoid Epidemic.—Fatalities in the outbreak of typhoid at Akron amounted to nineteen up to October 30. There were said to be then 200 cases under the care of physicians.

Almost 800 More Auto Licenses Revoked.—The commissioner of motor vehicles, Charles A. Harnett, announced, November 5, it is reported, that 790 automobile licenses had been revoked or suspended in the sixteen days ending October 30. The names, addresses and cause of revocation were made public; of the 322 in the Metropolitan district, forty-two were revoked because owners were driving while intoxicated.

Course in Accident Prevention.—The state industrial commissioner and the director, division of vocational extension education, state department of education, have arranged a series of lectures for vocational teachers on "Accident Prevention," especially as it refers to industry. The fifteen lectures will be given at Buffalo, Rochester, Syracuse, Oswego and Schenectady between November 1 and March 25; teachers who attend thirteen of the lectures in the course will be granted two hours' credit which may be applied toward the six hours' credit in professional improvement required every three years of teachers. Application for credit should be made to Lewis A. Wilson, state education department, Albany, not later than April 1.

Three Typhoid Outbreaks.—In addition to the serious outbreak of typhoid at the village of Akron noted in THE JOURNAL, recently, the state department of health reports another recent outbreak of thirteen cases at Schenectady which, with one exception, affected only Jewish families. The investigation thus far points to a delicatessen store from which most of these patients purchased food. Eighteen cases of typhoid occurred recently at Wellsville, and while the village water supply was well filtered and chlorinated, the investigation revealed that several of the patients had consumed water from a pump in a park from which the water was subject to pollution. The later cases in the outbreak occurred among the users of a single milk supply.

Conduct and Working of County Society.—The secretary invited the members of the Fulton County Medical Society to dine at the Country Club, Gloversville, September 17, for a meeting to be devoted solely to considering the conduct and working of the county society. The state society was represented by Dr. George M. Fisher, the president; Dr. Joseph S. Lawrence, executive officer, and Dr. Andrew Sloan, chairman, subcommittee on the nursing problem. The subjects discussed were:

"What Constitutes a Healthy Medical Society," Dr. Burlin G. McKillip.
"What Progress Have We Made in the Past Five Years," Dr. William J. Kennedy.
"Should We Take More Active Interest in the Function of Our Board of Health," Dr. Harry C. Denham.
"What is Our Attitude Toward the Various Welfare Organizations of the Community," Dr. Hiram B. Riggs.
"Were the Local Postgraduate Courses Held Last Winter a Success, and Should We Have Another Course This Year," Dr. George Lenz.
"What Are Our Greatest Faults as a Medical Society and in What Ways Should We Progress in the Future," Dr. Arthur C. Hagedorn.
"What is the Proper Way to Conduct an Outing of the Medical Society," Dr. Homer H. Oaksford.

New York City

Harvey Society Lecture.—Robert Chambers, Jr., Ph.D., professor of microscopic anatomy, Cornell University Medical College, will deliver the Harvey Society Lecture, November 20, at the new building of the New York Academy of Medicine, One Hundred and Third Street and Fifth Avenue, on "The Nature of the Living Cell Revealed by Microdissection."

Society News.—Major James F. Coupal, U. S. Army, will read a paper at the new Academy of Medicine Building, December 9, on "The History of Pathology."——Michael I. Pupin, professor of electromechanics, Columbia University, will deliver the Carpenter Lecture before the New York Academy of Medicine, November 18, on "Ionization and Chemical Reactions."

Dog Bites.—There were 6,714 persons bitten by dogs last year, according to the city department of health, and 4,077 bitten during the first half of this year. The health commissioner considers it imperative that the law relative to the muzzling of dogs be enforced. Among 152 dogs that were examined for rabies in the first half of 1925, there were only twenty-five positive cases, while among 395 dogs examined the first half of 1926, there were 200 positive for rabies.

New Health Center on East Side.—The Milbank Memorial Fund will open a model health center at 325 East Thirty-Eighth Street this month. The $250,000 five story building will house tuberculosis, dental, infant welfare and social hygiene clinics which the New York department of health will maintain. The community health council will also have its headquarters there. The Milbank Fund had appropriated since its establishment up to the end of 1925 a total of more than $3,900,000 in philanthropic grants; it is assisting in forwarding public health work also in rural Cattaraugus County and the city of Syracuse.

Personal.—Sir Henry Gauvain, Alton, England, who has recently addressed various scientific bodies on tuberculosis in this country, sailed for home, October 22.——Dr. Michael M. Tetelman has been appointed university physician for New York University.——A testimonial dinner was given, October 27, for Dr. George A. Sheehan, recently appointed chief of the medical service, Hospital of the Holy Family.——Dr. Mortimer W. Raynor has been appointed medical director at Bloomingdale Hospital to succeed Dr. William L. Russell who became general director of the psychiatric work of New York Hospital with which Bloomingdale is affiliated.

Change of Date of Dinner to Mr. Downing.—The testimonial dinner, previously announced to be given to Hon. Augustus S. Downing, will be given, December 9, at the Hotel Commodore, 7:30 p. m. Dr. Livingston Farrand, president, Cornell University, will preside, and the principal speakers will be Nicholas Murray Butler, LL.D., president, Columbia University, and Dr. Wendell C. Phillips, President, American Medical Association. The committee on arrangements, of which Dr. Orrin S. Wightman is chairman and Dr. Samuel D. Hubbard, secretary, requests that applications for tickets be made early. Remittances ($7.50 a plate) should be sent to Dr. James Pedersen, 40 East Forty-First Street, New York, treasurer of the committee. Mr. Downing is assistant commissioner and director of professional education for the state. He has served forty-two years in this field, and has made untiring efforts to raise the standards of the professions connected with medical practice.

Deaths by Violence in 1925.—A report by the chief medical examiner of the city of New York for 1925 shows, according to the New York *Times*, that that office handled 13,353 deaths or 765 more than in the preceding year. The cases covered by this report include automobile accidents, homicides, suicides and sudden deaths unattended by a physician or which occurred under unusual circumstances. Of this number, 5,581 were violent. There were 994 suicides, of which 388 were by gas, 145 by hanging and 135 by jumping from high places. There were 356 homicides, of which 248 were by shooting. There were 1,272 deaths from highway accidents, ninety-seven of whom were in children less than 5 years of age, 238 children from 5 to 10 years of age; eighty-two from 10 years to 15 years of age, and forty-five from 15 to 20 years of age. Eighty-seven persons are said to have lost their lives in elevator accidents. There were six deaths from baseball and an equal number from sleighing, one from football, three from fist fights and eight by diving. Alcoholism is said to have caused 585 deaths; tuberculosis, 290; sepsis, eighty-two; diabetes, forty-nine; tetanus, forty; diphtheria, twenty. The chief medical examiner is appointed by the mayor from a civil service list; his assistants are civil service employees. The total budget for last year of this office was about $135,000.

OHIO

Hospital News.—The East Side Hospital, Toledo, has acquired a new location at Starr and Euclid avenues.——Dr. Frederick P. Shenk, Norwich, Conn., has joined the staff of the Toledo Sanitarium as neuropsychiatrist.——A drive for $200,000 for the erection of a colored hospital in Cleveland will be undertaken in November, it is reported.

Society News.—Dr. Leora G. Bowers, Dayton, president, state medical association, addressed the Academy of Medicine of Toledo and Lucas County, November 5, on "What the State Association Is Doing and Hopes to Do for the Individual Physician."——The publicity committee of the Toledo Academy of Medicine and representatives of the Toledo *Blade* have arranged to publish in the *Blade* "Pointers in Medicine," an article on health topics, once a week to provide the public with information concerning health and disease.——The Toledo chapter of the American Society for the Control of Cancer was organized, October 8; Dr. Charles W. Moots was made general chairman and William J. Burns, executive secretary of the Toledo Academy of Medicine, will also be secretary of the Toledo Society for the Control of Cancer.

New Medical Library in Cleveland.—The Allen Memorial Medical Library, on the campus of Western Reserve University, was dedicated, November 13, and the Cleveland Academy of Medicine will formally open its quarters in this building November 19. The speaker of the evening will be Dr. Lewis Gregory Cole, New York; his subject, "The Diagnosis and Classification of Gastric Ulcer," will be illustrated with motion pictures. The history of the Allen Memorial Medical Library is interwoven with that of organized medicine in Cleveland. In the late seventies, Dr. Isaac N. Himes subscribed to a foreign medical journal for the Case Library and arranged that all dues paid to the Case Library by physicians should be used in the purchase of medical literature. A few years later $2 of the dues of the Cuyahoga County Medical Society were set aside to purchase medical literature to be placed in the Case Library. This was the arrangement until 1894 when steps were taken to form a medical library association; Case Library then set aside a corner for the books of the medical library association. This was the beginning of the present library. With the growth of the Case Library, it became impossible in 1897 to care for the medical books. An arrangement with the city library was then attempted but not consummated, so in the next year, the library association purchased the property at 2318 Prospect Avenue. There the medical library remained until Oct. 1, 1926, and there the county medical society held meetings until its amalgamation into the Academy of Medicine of Cleveland. The building, remodeled and enlarged in 1906, served the profession well until it too was outgrown. Then the late Dr. Dudley P. Allen left a trust fund of $200,000, the income to be used for the medical library provided it continued an independent existence. Dr. Marcus Rosenwasser left a bequest of $10,000, the income to be used for the purchase of books. Dr. B. L. Millikin left $25,000; Dr. H. F. Biggar set aside $5,000 and Dr. L. S. Eberhard, Wadsworth, Ohio, left $5,000 for the library. In 1916, the adjoining property was purchased and it was decided to construct a new building. Western Reserve University then offered a site to the medical library association at Euclid Avenue and Adelbert Road, and Mrs. F. F. Prentiss, the former Mrs. Dudley P. Allen, offered funds to erect a suitable building if the location was accepted. An appeal was made to physicians for $75,000 for furniture and equipment, and from friends of former Cleveland physicians $100,000 was contributed. Thus a library, which less than a half century ago began with a single journal contributed to the shelves of the Case Library, has become established in a magnificent structure with accommodations for professional meetings and special library studies. At the dedication, November 13, the president of Western Reserve University, Robert E. Vinson, the president of the Cleveland Medical Library Association, Dr. Henry L. Sanford, and Drs. F. E. Bunts, George E. Follansbee, chairman of the building committee, and Harvey Cushing, Boston, were the speakers. All Cleveland physicians and their families were invited to a reception after the dedication, and on the following day the public was invited to inspect the building. The Cleveland Academy of Medicine will hold its meetings at the Allen Memorial Medical Library from now on.

PENNSYLVANIA

Hospital News.—The Harrisburg Polyclinic Hospital held a reception, September 16, for the physicians of that community on the occasion of the dedication of its new four story building.

Society News.—Dr. Charles R. Austrian, associate professor of clinical medicine, Johns Hopkins University School of Medicine, Baltimore, addressed the Academy of Medicine, Harrisburg, September 24, on "Vascular Episodes Simulating Surgical Diseases of the Abdomen"; Dr. Samuel G. Gant, New York, addressed the academy, October 29, on "Con-

stipation." A special meeting of the academy was held, September 18, at the Penn-Harris Hotel, when Dr. Charles H. Mayo, Rochester, Minn., gave an address.

Philadelphia

Anniversary of Resident Physicians of Blockley.—The fortieth anniversary of the Association of Ex-Resident and Resident Physicians of Blockley, now the Philadelphia General Hospital, will be held at the Penn Athletic Club, December 7. Former resident physicians and interns are requested to forward their addresses at once to the secretary-treasurer, Dr. George Wilson, Twentieth and Chestnut Streets, Philadelphia, so that further information may be supplied.

Medical Exhibits at the Sesquicentennial.—Dr. Wilmer Krusen, director, public health of Philadelphia, has supplied additional information concerning the health exhibits at the Sesquicentennial Exposition. The exhibit in the Educational Building is a series of booths occupying 8,400 square feet of floor space arranged primarily to interest laymen. These exhibits are in the form of models, photographs, charts and electrical displays. Among others, there are booths for surgery, medicine, hygiene, sanitation, chemistry, pharmacy, tuberculosis, dermatology, neuropsychiatry, pediatrics, laryngology, ophthalomolgy, occupational therapy, nursing, hospitals and history of the county medical society. The funds for the preparation of these exhibits were largely granted by interested organizations or by physicians themselves who constitute the committee. The surgical display deals principally with the prevention of cancer, diseases of the eye and ear, protection of children from caustic substances and from swallowing foreign bodies. Dangerous play toys are exhibited. The displays in the medical section pertain largely to the prevention of diseases rather than treatment. Modern instruments of precision used in the detection of heart disease are in full view of the public. There are wax models of food containing the essential elements for the prevention of various diseases. Child hygiene is depicted in models, school medical inspection and the prevention of mosquitoes, flies and other insects are demonstrated. The exhibit on tuberculosis was arranged by various hospitals and sanatoriums in the form of models showing how examinations are made of patients to discover tuberculosis early. There is a separate exhibit by the state department of health in the Pennsylvania Building demonstrating work in the state sanatoriums for tuberculosis and the prevention of diphtheria. The U. S. government has installed two exhibits in the Transportation Building, one of the veterans' bureau, showing on a large map the location of all regional hospitals in the country, and articles of furniture and other articles made by sick veterans. The U. S. Public Health Service has an exhibit in which, among others, there is a delousing station and a set of models showing the reaction to vaccination.

TENNESSEE

Society News.—The East Tennessee Medical Association at its recent meeting, Maryville, elected Dr. J. Walter McMahan, Alcoa, president; Drs. William E. Howell, Morristown, and Beecher L. Ogle, Knoxville, vice presidents, and Dr. Jesse C. Hill, Knoxville, secretary-treasurer, reelected. The next meeting will be at Johnson City in May.

Health Department Moves.—The city department of health of Nashville will move before December 1 into the old Albert E. Hill school building, Eighth Avenue and Demonbreun Street, which will be renovated. The clinic room will be maintained in the present location to care for patients from the police station and the city workhouse. The present quarters are considered inadequate and insanitary.

VIRGINIA

Personal.—Dr. Thomas D. Armistead, Roanoke, has been elected secretary of the Association of Surgeons of the Norfolk and Western Railroad.——Dr. Cornelia W. Segar has been appointed medical director of Piedmont Sanatorium, Burkeville.

Founders' Day at Medical College.—The Medical College of Virginia, Richmond, will celebrate Founders' Day, December 1. The principal speaker will be the Hon. Roswell Page. The program will be built around the history of the academy square in Richmond, where the medical college occupied its first permanent building in 1844. Dr. William B. Porter, chief, department of medicine, Lewis-Gale Hospital, Roanoke, has been appointed full-time professor of medicine at the college, and will spend the coming winter and spring studying in American and European universities; he will take up his work at the college next summer. Dr. M. B. Jarman, assistant in neuropathology, and J. R. McCauley, secretary-treasurer of the college, will share the major duties heretofore performed by the superintendent of the college hospitals. The four college deans will also be given increased hospital responsibilities.

WISCONSIN

Liquor Licenses Revoked.—The district prohibition administrator, with headquarters in Chicago, recently issued orders revoking the liquor licenses of the following, it is reported, for the reasons indicated:

Dr. Frederick F. Fowle, Hospital for Insane, Wauwatosa, failed to keep proper records. Unlawful issuance of prescriptions. Diversion.
Dr. William H. Linke, Milwaukee, failed to keep proper records. Issued prescriptions unlawfully. Diversion.
Dr. Robert C. Thackery, Racine, failed to keep proper records. Unlawfully issued prescriptions. Diversion.

Supreme Court Upholds Revocation of License.—The Wisconsin Supreme Court handed down a decision, October 12, upholding the Milwaukee Circuit Court, it is reported, in the action of the state in revoking the license to practice medicine of Dr. Emil C. Schoene, who was recently released from a four year term in the house of correction of Milwaukee County. Dr. Schoene, it is reported, was convicted of manslaughter in 1922 when an infant died during a criminal abortion.

Society News.—Members of the faculty of the Northwestern University Medical School, Chicago, conducted a symposium on physical diagnosis before the Medical Society of Milwaukee County, November 12, at the Milwaukee Academy of Medicine, Dr. Robert B. Preble discussing the heart; Dr. Charles A. Elliott, the lungs; Dr. Allen B. Kanavel, the abdomen, and Dr. Archibald Church, points in a general neurologic examination.——The Eleventh District Medical Society held it first annual meeting at Superior, October 8; the morning was devoted to clinical work at St. Mary's Hospital; the afternoon to scientific discussions which were attended by the president of the state medical society, Dr. Joseph F. Smith, Wausau, Dr. John M. Dodd, Ashland, a counselor, and Mr. J. G. Crownhart, the secretary of the state medical society.——The University of Wisconsin Medical Society, November 10, was addressed by Chauncey D. Leake, Ph.D., associate professor of pharmacology, on "The Development of Medical Ethics," and "The Position of Medical Ethics in Ethical Theory"; Dr. William D. Stovall, professor of hygiene, spoke on "Swimming Pool Sanitation."

Second Annual Clinic.—In conjunction with the university homecoming, November 5, Marquette University School of Medicine Alumni arranged a program of clinics and addresses which were given at the University High School and at Milwaukee hospitals. Prof. Ernest Loewenstein, University of Vienna, spoke on "Facts on which Specific Treatment of Tuberculosis Is Based"; Prof. E. L. Miloslavich, "Pathogenesis of Human Pulmonary Tuberculosis"; Dr. Joseph B. De Lee, Chicago, "The Prevention of Direct Obstetric Mortality"; Dr. Bernard H. Nichols, of the Cleveland Clinic, Cleveland, Ohio, "Roentgenology and Osteogenic Sarcoma; Dr. Clifford G. Grulee, Chicago, "Care and Feeding of Premature Infants"; Dr. Glover H. Copher, St. Louis, "Gallbladder Diagnosis"; Dr. Herman L. Kretschmer, Chicago, "Borderline Problems in Urology"; and Dr. Charles H. Mayo, Rochester, Minn., "Cancer of the Large Bowel." There was a dinner at the Milwaukee Athletic Club Friday evening, when Rev. Albert C. Fox, president, spoke on "The Future Marquette Medical School," and Dr. Louis B. Wilson, Rochester, on "Postgraduate Medical Educational Methods in Various Centers of the World."

PHILIPPINE ISLANDS

Disaster—Typhoon Kills 300.—A typhoon swept up from the direction of Samar last week and devastated the city and province of Batangas where about 300 were reported killed, a tidal wave killing about 100 at Bauan. The property damage is reported to amount to millions of dollars.

GENERAL

Announcement of Nobel Prize was Premature.—The recent announcement of the award of the 1926 Nobel Prize in Medicine to Professor Johannes Fibiger, Copenhagen, was premature. Cable dispatches from Stockholm state that no award of the Nobel Prize in Medicine will be made this year as no work of sufficient merit to qualify has been brought to the attention of the Swedish Academy of Medicine.

Resolution of Esteem.—The Board of Directors of the Russell Sage Institute of Pathology passed resolutions, Octo-

ber 19, expressing their high esteem of the late Dr. John Howland, who for seven years was a fellow member of the board. Dr. Howland made important discoveries concerning rickets and tetany. The work of the institute also has resulted in outstanding contributions to medical science.

Society News.—At the twenty-third annual convention of the American Association of Railway Surgeons, Chicago, November 6, Dr. James R. Garner, Atlanta, Ga., was elected president; Drs. Fred S. Clinton, Tulsa, Okla., John W. Martin, Des Moines, Iowa, and John W. Towey, Powers, Mich., vice presidents; Dr. Frederick G. Dyas, Chicago, treasurer, and Dr. Louis J. Mitchell, Chicago, secretary-editor.

Another Four Weeks of Automobile Fatalities.—During the four weeks ending October 9, there were 656 deaths from automobile accidents in seventy-eight large cities of the United States. Since May, 1925, the lowest total number of deaths in a four week period was 350 for the period ending March 27, 1926; the highest number was for the four week period ending October 9. Seven of these large cities (Duluth, Kansas City, Kan., New Haven, Conn., Omaha, Neb., Tacoma, Wash., New Bedford and Springfield, Mass.) reported no automobile fatalities for the last four weeks, while for the corresponding period last year only four of the cities reported no automobile fatalities.

Government Positions Open for Physicians.—The U. S. Civil Service Commission announces a competitive examination for the federal civil service for which applications will be rated as received at Washington, D. C., until Dec. 30, 1926. There are vacancies in the following positions: senior medical officer, medical officer, associate medical officer, assistant medical officer and junior medical officer, and there is special need for medical officers qualified in tuberculosis or neuropsychiatry. There are vacancies in the departmental service, Washington, D. C., Indian Service, public health service, coast and geodetic survey, Panama Canal, and Veterans' Bureau field service. The entrance salaries vary, ranging from $1,860 to $6,000. Applicants should apply at once on forms 2118 and 2398, stating the title of examination desired to the U. S. Civil Service Commission, Washington, D. C.

Medical and Surgical Association of the Southwest.—The twelfth annual meeting of this association was held at Tucson, Ariz., November 11-13, under the presidency of Dr. Willard Smith, Phoenix. Among the speakers were Dr. James C. Masson, Mayo Clinic, Rochester, Minn., whose subject was "Total Abdominal Hysterectomy versus Subtotal"; Dr. Paul Gallagher, El Paso, Texas, "Gallbladder Studies"; Dr. Orville H. Brown, Phoenix, "Cardiac Efficiency"; Dr. Joseph G. Wilson, U. S. Public Health Service, "Investigation of Diarrheal Diseases in New Mexico"; Dr. Samuel D. Swope, Chihuahua, Mex., "Medical and Surgical Service in the Industrial World"; Dr. Herman C. Bumpus, Jr., Mayo Clinic, Rochester, Minn., "Etiology, Diagnosis and Treatment of Stone of the Ureter"; Dr. Burnett W. Wright, Los Angeles, "Stones in the Urinary Tract," illustrated by lantern slides.

Fellowships for College Women.—The American Association of University Women announces a number of fellowships available for women for 1927; application should be made by letter to the chairman of the committee on fellowships, Agnes L. Rogers, Ph.D., professor of education and psychology, Bryn Mawr College, Bryn Mawr, Pa., not later than Jan 1, 1927. Among the fellowships offered is the Mary Pemberton Nourse Memorial Fellowship, which is offered biennially and has a value of $1,500. The candidate must possess a bachelor's degree or its equivalent, and have completed a minimum of either two years of graduate study tending toward public health work, or two years of work in the field of public health. It may be used, in fact, for any work along the line of public health which shall be approved by the committee. In the application required of candidates, the applicant must explain her conception of public health work and, when possible, a personal conference between the candidate and a member of the committee will be arranged. The association announces also the Sarah Berliner Research and Lecture Fellowship which is offered annually for research in physics, chemistry or biology. There are other fellowships offered in arts, science or literature.

Southern Medical Association.—The twentieth annual meeting of this association will be held at Atlanta, November 15-18. There will be a general medical and a general surgical clinic in the municipal auditorium entirely by Atlanta physicians, and in every instance the clinician either must show a patient, a specimen or demonstrate a laboratory method in connection with his talk. There will be two general sessions Tuesday, including clinics and papers presented by outstanding physicians in the South. Dr. Charles C. Bass, dean and professor of experimental medicine, Tulane University School of Medicine, New Orleans, will deliver the presidential address Monday evening, and the orations on medicine and surgery will be presented at the Wednesday evening session. The section meetings will occur throughout Wednesday and Thursday. There will be scientific exhibits, and a program of scientific motion pictures. The grand ball and reception will be Wednesday evening; there will be a banquet for the visiting ladies, a musicale at one of the clubs, a ride to Stone Mountain, two golf tournaments and a trap shooting tournament. The National Malarial Committee and the Southern Association of Anesthetists will meet jointly with the association, and the American Social Hygiene Association will hold its annual conference in Atlanta, November 18-20.

CANADA

Society News.—At the fifty-seventh annual meeting of the Canadian Medical Association, Victoria, B. C., the following officers were nominated for the ensuing year: president, Dr. Forrest B. Leeder, Victoria; president-elect, Dr. F. N. G. Starr, Toronto; honorary secretary, Dr. Alfred T. Bazin, Montreal; chairman of the council, Dr. Alexander Frederick Primrose, Toronto; general secretary, Dr. Thomas C. Routley, Toronto.——The Medical Society of Nova Scotia has decided to celebrate the jubilee of the graduation of Dr. John Stewart by establishing at Dalhousie University a chair of surgery to be called by his name and for which purpose it is proposed to raise $50,000.——Dr. Alexander D. Blackader, Montreal, has been reappointed editor of the *Journal of the Canadian Medical Association* for the ensuing year.——Dr. James D. MacGuigan, Charlottetown, has been elected president for the ensuing year of the Prince Edward Island Medical Association.——Sir Henry Gauvain of Alton, England, addressed a joint meeting of the Manitoba Medical Association and the Kiwanis Club at Winnipeg recently; at the annual meeting of this association the speakers included Dr. Thomas C. Routley, secretary of the Canadian Medical Association; Dr. Fraser B. Gurd, Montreal, and Dr. George C. Hale, London, Ont.

FOREIGN

Annual Old Students' Dinner.—The annual Old Students' Dinner of St. Bartholomew's Hospital, London, was held in the Great Hall, October 1. Mr. W. T. Holmes Spicer, presiding, said that the most important event of the year was the completion of the Queen Mary block of buildings. A new department for pay patients is under consideration. The biggest plan in prospect is the removal of the school buildings to the other side of Giltspur Street at an estimated cost of £140,000. Other speakers were Sir William Beveridge, vice chancellor of London University, Sir Percival Hartley and Dr. Owen Lankester.

Personal.—Dr. Oswald S. Lowsley, director, Brady Institute of Urology, New York, gave an illustrated lecture on "Major Operations Under Local Anesthesia" before the American Medical Association of Vienna at its club rooms, October 1; Dr. Lowsley was in Europe to address the Continental Congress of Urology, which met in Vienna.——Dr. T. Asayama, professor of medicine, Kyoto Medical College, has been appointed dean to succeed Dr. S. Ogawa, resigned.——The *Medicina Contemporanea* states that Dr. Carteado Mena, Lisbon, is now another martyr to the professional use of the roentgen rays. Before him, Dr. Carlos L. dos Santos, who introduced the roentgen rays into Portugal, was paid official tribute by the government when amputation became necessary.——The Darmstaedter prize of the Institute for Experimental Chemotherapy is to be awarded this year for the first time. The recipient is Prof. R. Pfeiffer of the University of Breslau, discoverer of bacteriolysins, of the influenza bacillus and Pfeiffer's phenomenon.——Dr. C. Willems, professor of surgery, University of Liége, who presided at the last meeting of the International Surgical Society, Rome, has been made a commander of the order of the Crown of Italy.

Deaths in Other Countries

William E. Fothergill, aged 61, author of "Manual of Diseases of Women" and other books, professor of obstetrics and gynecology, Victoria University of Manchester, England, honorary consulting gynecologist of the Royal Infirmary, dropped dead at the conclusion of a speech at the University of Manchester banquet, November 4.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 23, 1926.

The Health Education of the Public

As might have been expected, Sir Thomas Horder's proposal, made at a meeting held at the home of the British Medical Association, that articles on health in the lay press should emanate from a representative committee, whose personnel might be published from time to time so as to assure the public that it was competent for the purpose, has not met with the approval of editors. Under such captions as "Committee Journalism" and "Muzzling the Doctor," this proposal is attacked in the press. The medical expert who gives his knowledge to humanity through the columns of the newspapers, lending his name and reputation to add weight to what he writes, is described as serving a useful purpose. Horder's proposal is described as practically censorship, to which experts would object. Moreover, the public would insist on knowing who preaches to them and what is his authority for doing so. And the newspapers want to deal with matters in their own way, "which is the expert way from the point of view of the publicist, without the intervention of a committee which may be expected to reduce everything to the level of an unattractive technical treatise. Another newspaper says that by this plan one cannot educate the public because one cannot interest it through the medium of a committee. "Moreover, such articles are to be anonymous, which means that they will be characterless, standardized and overcautious, with the balanced meaninglessness of a committee compromise."

In the meantime Sir William Arbuthnot Lane is following the opposite course and contributing a series of signed articles to the *Daily Mail* entitled "Secrets of Good Health." So far his recommendations have been dietetic. He declares that individual likes and dislikes are not a reliable guide as to the choice of food, which requires "a little special knowledge." Manufactured overrefined and preserved foods have led the people away during the last fifty years from the fresh and natural foods which are the basis of health. The right foods must contain the three vitamins (A, B, C), certain mineral salts and the good types of protein. He complains that the medical student receives no training in dietetics beyond a few lectures from teachers of other subjects. As a consequence, the layman often knows more than the physician. "Why is boiled white fish with white sauce and white rice pudding such a common diet in our nursing homes? All these foods are grouped among those we ought not eat by experts." Many of the ills of civilization Lane attributes to wrong habits of feeding, mentioning indigestion, constipation, appendicitis, rickets, tuberculosis, diabetes and cancer. He is an incisive writer with a sense of humor and an almost Shavian love for the paradoxical. Recently at the National Liberal Club, speaking on "The New Health Society," he declared that while physicians were supposed to teach the public what they should eat, there was nobody to teach the physicians what to teach. They generally told people what they liked best. Within a short time he hoped that some man of ample means would come forward and endow a chair of dietetics in the University of London. Holding up a roll which had been beside his plate, he said: "The curse of our age is that we are provided with white bread. I did not eat mine. You can't feed rats and mice on white bread and yet you give it to your guests. I noticed that our distinguished chairman (Lord Lincolnshire) drank only water with his luncheon. I am not at all sure that a little alcohol is not good for you" (a statement which was received with applause).

The Harveian Oration

Sir John Rose Bradford, president of the Royal College of Physicians, delivered the Harveian oration at the college. He said it was a striking testimony to the greatness of Harvey that, notwithstanding the lapse of time and the great benefactions received by the college from other founders, the oration had become more and more a tribute to Harvey's unparalleled services, not merely to the college, but to mankind. That great result was, no doubt, in part dependent on the greatness and brilliance of Harvey's discoveries as to the existence of the circulation, and the unraveling of some of the mystery surrounding the heart beat. But it was due still more to the great conceptions he formed as to the proper methods to follow in attempting to understand the facts of nature. Harvey combined in himself the physician and the physiologist. The history of the study of the phenomena of fibrillation had been cited as an illustration of the very close relation between experimental science and the daily work of physicians, especially if they wished to found their art on a secure basis of science. The same illustration might be found equally well in the history of the development of our knowledge as to the nature of the normal beat of the heart and of its disordered action in disease. There, also, they saw the extraordinarily close connection between pure physiology on the one hand and the interpretation of the clinical symptoms of heart disease on the other. The pursuit of knowledge by Harvey's experimental method was not to be regarded only as a means for the acquisition of results of great value in their daily work. It was of supreme importance in laying the foundations of their conceptions as to the nature of the processes which they saw at work in disease.

The Changed Position of Measles and Scarlet Fever

Thirty years ago measles was a disease the name of which provoked amusement, whereas scarlet fever was regarded with anxiety. But today measles has become the more serious menace to young life. For some unexplained reason, scarlet fever has been steadily losing its virulence. The metropolitan asylums board (the body which controls all the fever hospitals of London) has therefore decided to make a large allocation of beds for measles cases. The decision is thus stated: "In view of the much higher mortality of measles, and its far greater destructive effect on child life, the present practice of always admitting scarlet fever in preference to measles should be abandoned, and, in time of measles prevalence, the larger proportion of accommodation should be allotted to measles." During the last fifteen years, the annual death rate due to measles in London has been 251 per million, while that from scarlet fever has been only 42. The death rates of patients treated in the metropolitan asylums board hospitals are: measles, 10 per cent; scarlet fever, 1.5 per cent. It is probable that from 80,000 to 100,000 cases of measles occur annually in London. The change of policy has been agreed to by the ministry of health, the London County Council and the medical officers of the metropolitan boroughs. Measles itself is not often the cause of death, but the bronchopneumonia that complicates it. The new arrangement, indeed, is in its essence a measure of preventive medicine—the prevention of bronchopneumonia.

The Wellcome Historical Medical Museum

The Wellcome Historical Medical Museum was founded in London in 1913 by Mr. Henry S. Wellcome of the manufacturing chemists Borroughs Wellcome & Co. It is designed to present collections illustrating the history of medicine, surgery, chemistry, pharmacy and the allied sciences—a thing unattempted in any of the other museums. It has been

formally reopened after being closed since last November for reorganization and enlargement. The valuable collection of medical exhibits has been reclassified, and the technical and administrative staff has been increased by men qualified to carry on the development of the museum on strictly scientific lines as planned by the founder, who desires it to be of educative value to research workers and students. It includes a hall of primitive medicine illustrating the methods by which primitive races cured their bodily ills, an anatomy room, a hall of statuary depicting the clasic period in medicine and surgery, a portrait gallary, and many historical exhibits. Sir Humphry Rolleston, in opening the museum, said that they owed a great debt to Mr. Wellcome for his unbounded generosity in founding the museum and in throwing it open with its wealth of historical lore. They regretted that Mr. Wellcome, who is in America, was unable to be present. Sir Arthur Keith, conservator of the Museum of the Royal College of Surgeons, in an address on the utility of such museums said that Mr. Wellcome had ransacked the world and had brought together under one roof a rich and vast assortment of materials for the history of medicine such as has never before been seen or studied in any country. The increase of knowledge and the fostering of research was the first duty of a museum. Then there was its immediate duty to the public, the duty of direct education.

Shaw's Championship of Irregular Practitioners Criticized

In his inaugural address at the opening of the winter session of St. George's Hospital, Dr. Graham Little, dermatologist and member of Parliament, dealt with a recent effusion of Mr. Bernard Shaw in this manner: "My illustrious countryman is handicapped, but of course not deterred, by a complete ignorance of the subject he criticizes, and perhaps for this reason is more than ever typical of a great mass of public opinion which, the profession would do well to recognize, is dissatisfied with many of the circumstances attending the practice of medicine today. Shaw has written 'Unregistered practitioners are at a heavy premium because they have mastered the modern technic of which registration guarantees ignorance.'" Replying to this, Dr. Little said that the period required for entrance into the medical profession was more than twice as prolonged as was required for any other. In order to lay greater emphasis on the ultimate end of medicine, namely, the prevention of disease rather than its cure, the general medical council had wisely laid down "that throughout the whole period of study the attention of the student should be directed to the importance of the preventive aspects of medicine. In order to secure the maximum period of study for clinical subjects, it further laid down that a minimum of three years should be available for these studies. But this period turned out much more usually to be four years. In a conversation which Dr. Little had with the adviser to the Carnegie Foundation, who was visiting England, that expert and astute person declared it as his experience that, in the practical art of medicine, the British during the war far excelled every other belligerent. It was precisely in the preposterous neglect of clinical study that the unqualified practitioners contrasted so unfavorably with the orthodox. There were not wanting signs that in this length of curriculum the medical profession was near the breaking point when the game would not seem worth the candle, and the encouragement given by the unthinking to unqualified practice was hastening this consummation. If the osteopath after a period of very imperfect education, ranging from one to four years, was to be given, as some desired, the same privileges accorded now to physicians with seven years' rigorous study behind them, who would be fool enough to take the severer course? Unhappily, Great Britain among civilized countries stood nearly alone in the encouragement which the legislature gave to unqualified practice.

This address has given rise to a protest in the *Morning Post* by Dr. P. J. Dunning, "vice president of the British Osteopathic Association," who quotes the Encyclopaedia Britannica to show that the osteopath must have a good preliminary education, followed by a course of study of four years. To this Dr. Little replies that the American osteopathic colleges are not adequately equipped to teach either the basic sciences on which diagnosis rests or to train the students in the clinical tradition which has made the British schools of medicine famous. Recognition of colleges in the United States means nothing more than that an individual state "recognizes" the college within its borders. Such recognition may be worth exactly nothing. The same state will often "recognize" a "college" which is merely a bogus degree selling shop. There is no statutory or federal authority in the United States comparable with our general medical council charged with the inspection and maintenance of status of medical schools. Moreover, the Council of the American Medical Association in its grading of schools found osteopathic colleges so poorly equipped for instruction that it could not admit them even to grade C, which is of a standard so low as to be wholly unacceptable to our general medical council.

Notification of Ophthalmia Neonatorum

The ministry of health has issued regulations for the notification of ophthalmia neonatorum. Every physician on first becoming aware that a child is suffering from the disease must forthwith notify the case on a prescribed form and state at the same time the date of birth of the child, the name and address of the parent or other person in charge of the child, and the date of the onset of the disease, and must transmit this information to the health officer of the district. For this service a fee of 50 cents will be paid. The health officer must within twenty-four hours forward a copy of the notification to the health officer of the administrative area within which the district is situated.

PARIS

(From Our Regular Correspondent)

Oct. 13, 1926.

The French Congress of Surgery (Continued)

M. Mocquot of Paris and Professor de Rouville of Montpellier presented a paper on "Conservative Operations in Inflammatory Lesions of the Adnexa." After stressing the conservative character of present-day operative gynecology, they enumerated the various interventions proposed to maintain fecundity, or, at least, menstruation, after operation. They endorsed medical treatment in acute adnexitis. The enumeration included (1) conservative operations on the ovary: ignipuncture, now abandoned; partial resection of the ovary, which is often followed by recurrence of cysts; resection of the presacral nerve (a good operation, indications for which are the existence of true neuromas of the sympathetic nerve in the pedicles of ovaries that are chronically inflamed, and one that has given excellent results in the hands of Roux of Montpellier); (2) conservative operations on the tube: resection and repair of the tube, suturing of the infundibulum to the ovary, restoration of the patency of the tube by insufflations of gas or the injection of iodized sesame oil, implantation of the tubes in the uterus; (3) ovarian grafts in the infundibulum or in the interior of the uterus (Tuffier), and (4) excision of the fundus uteri. Villard of Lyons recommended, in place of insufflation of gas, intratubal aspiration.

On the third topic, "The Treatment of Gonococcal Arthritis in the Evolutional Stage," one paper was presented by Prof. Gaston Michel of Nancy, and the other by Dr. Mondor of

Paris. Both authors emphasized the importance of serodiagnosis—especially in women, in whom the diagnosis of gonorrhea is sometimes doubtful. They reviewed the therapeutic methods proposed during the last twenty years: hot air, electrotherapy, radium therapy, simple puncture, antiseptic lavage, arthrotomy (with or without drainage) followed by early mobilization, nonspecific serotherapy, specific serotherapy (intra-articular, intravenous), autoserotherapy, vaccinotherapy and vaccine (Chabanier). Their conclusion was that at present not any therapeutic method is always effective. All methods have met with some successes and some failures. Puncture with early mobilization is perhaps the least inconstant method. Moreover, many cases heal spontaneously by rest and mobilization. Vaccine and serum treatments have not fulfilled the hopes placed in them. Reynès of Marseilles recommended synovectomy.

In addition to the papers on the three main topics, there were about fifty individual communications on other subjects. During the session, which lasted a week, numerous surgical demonstrations were given in the forenoon in all the hospitals of Paris and in the private clinics. A new service of urologic surgery, the Albarran Pavilion in the Cochin Hospital, was dedicated and placed in charge of Dr. Chevassu. There are two other urologic clinics in Paris, one in the Necker and one in the Lariboisière hospital. The Albarran Pavilion is a three-story structure provided with modern equipment throughout. Students are able, by means of a double row of oblique mirrors, to observe the smallest details of an operation while remaining in an adjoining room. Each student is supplied with a lorgnette with which to magnify the image reflected in the mirror. The didactoscope, as the apparatus is called, is employed also in the surgical services of Montpellier. An exhibit of pharmaceutic products and surgical, radioscopic and orthopedic appliances occupied the corridors of the Faculty of Medicine. The general assembly of the association elected as president for the following year Professor Régouin of Bordeaux and as vice president (president in 1928) Professor Gosset of Paris.

The Twenty-Sixth Annual Session of the French Urologic Association

Simultaneously with the Congress of Surgery, the twenty-sixth annual session of the Association française d'urologie was held in another part of the Faculty of Medicine, under the chairmanship of Professor Marion. The main topic on the program was "Vesico-Ureteral Reflux," the discussion of which was opened by a paper by Lepoutre of Lille. The division into "congenital reflux," treated by Legueu and Papin in 1913, and "acquired reflux," discussed by Pasteau in 1914, was adopted. In addition, eighty further questions were treated, and, with the discussions that followed, occupied four long afternoon sessions. Dr. Pasteau, general secretary, read, in connection with his annual report, a biographic sketch of Dr. Desnos, who founded the association in 1896 and who died this year during an expedition to Indochina. The next session of the congress will convene in Paris in 1927 under the chairmanship of Dr. Oraison of Bordeaux.

Convention of Hospital Physicians and Surgeons of France

On the occasion of the two congresses previously mentioned, the Association des médecins et chirurgiens des hôpitaux de France held its sixth annual convention. The association has 600 members, and the chairman is the founder, Professor Reynès of Marseilles. The convention took up the question of the abuse of free hospitalization, which deprives all the heads of hospital services, private clinics and sanatoriums of a large number of private patients. A resolution was passed that the medical societies should institute an inquiry to determine the patients accorded free admission to hospitals who were not entitled to such privilege, and after collecting such information, should prefer a request for pecuniary reparation to the administrations of these hospitals or to the municipal councils by which they are controlled. The assembly decided also to oppose the too ready acceptance of the declarations of patients as to their limited circumstances. A resolution was passed to support before parliament the adoption of the projected law to include hospital physicians, interns and externs among those entitled to compensation and pensions in cases of accidents occurring during the performance of professional duties. At present, only the nurses and the employees of hospitals are beneficiaries of the law, which is a manifest injustice. The assembly voted also that the hospital charges exacted of patients able to pay should be sufficiently high to allow adequate fees to physicians and surgeons. At present, physicians and surgeons in the public hospitals can lay no claim to fees from patients. They receive annually a merely nominal sum, less than the wages of the most modest worker in the hospital, which is not regarded officially as a salary but rather as indemnification for minor expenses.

BELGIUM

(From Our Regular Correspondent)

Sept. 10, 1926.

Appendicitis

M. Mayer has communicated to the Belgian Academy of Medicine an article on appendicitis. The large number of cases in which he has operated, and the results, which improved as his technic improved, are the main features of his article. The communication deals with 2,304 cases classified as acute, subacute and chronic appendicitis, and including 596 men (26 per cent) and 1,708 women (74 per cent). Fifty-eight per cent of the cases were primary, while 42 per cent were secondary. The mortality was as follows: patients with acute appendicitis operated on between 1902 and 1908, 20 per cent; between 1908 and 1918, 15 per cent, and from 1918 to 1925, 6 per cent; primary chronic appendicitis, operation in 582 cases, no deaths; and secondary chronic appendicitis, operation in 962 cases, with no fatalities.

Mayer does not attach great importance to any of the points of special tenderness in the abdominal wall, but, he suggests, as more accurate, a point within the triangle formed by the points established by McBurney, Lanz and Morris, respectively, which he calls the ileocecal triangle. He considers as valuable the sign elicited by the increase of pressure pain when the patient changes suddenly from the dorsal decubitus to the left lateral position.

The author holds that in acute appendicitis an operation should be performed as soon as the diagnosis is established (unless there is a contraindication of a general nature). The best results are obtained during the first twenty-four hours. A question on which opinions differ is that of postoperative drainage. The author does not comprehend Ombrédanne's opposition to drainage of abscesses and peritonitis associated with appendix involvement. He regards the Ombrédanne procedure as extremely grave, and thinks that, if patients succumb following drainage, it is not because of drainage but rather because of inadequate drainage.

Medicopedagogic Institute for Subnormal Children

At Waterloo, a medicopedagogic institute for children whose brains and nervous systems do not function normally has been established. All instruction is given according to the methods of Prof. O. Decroly. The forms of employment are tillage, animal husbandry, landscape gardening, kitchen gardening, joinery, shoemaking, cooking, sewing, mending, busheling and domestic science (care of dormitories, care of clothing, dining

room management, rest rooms, play rooms, shower baths, stairs, corridors and class rooms). The child is given as much liberty as possible but is strictly supervised. He is never left to himself, but he is taught how to manage his own affairs, aided by his schoolmates and under the surveillance of teachers. The lessons occupy only a small portion of the working time of the child: three hours. Gymnastic exercises take up one half hour; organized play another half hour; various forms of work from six to eight hours; open-air games two hours, and sleep, from nine to ten hours. There are at present 128 boarding pupils in the school (114 boys and fourteen girls).

Suprasymphyseal Cesarean Section

Dr. Phaneuf of Boston has presented to the Société belge de gynécologie et d'obstétrique of Brussels a communication on 203 low cesarean sections performed during the last two years. He explained the two forms of teachnic that he employs—the transperitoneal and the intraperitoneal. During the discussion, it developed that opinions differ as to the relative dangers from hemorrhage in low cesarean section. Weymeersch pointed out that low cesarean operation is prolific of hemorrhages when performed under general anesthesia, but that under spinal anesthesia the extravasation of blood is much less. Sebrechts confirmed that view. He gave his statistics, which included 135 operations, with three deaths. Phaneuf remarked that, in view of these excellent results, he was going to employ spinal anesthesia more frequently.

Military Adaptability of Nervous Persons

Addressing recently the Société de médecine mentale of Belgium, M. Vervaeck emphasized the need of eliminating, before their admission to the army, all persons who are mentally weak. He recommended that the society formulate the conditions that would justify the exclusion, from the army, of men suffering from mental and nervous affections. A questionnaire will be submitted to the members of the society.

The Need of Physicians on the Congo

During a reception given at the Musée Colonial for the members of the Journées Médicales, M. Arnold, administrator general of the colonies, delivered an address. "Our colony," Arnold said, "cannot develop as it should unless we can send there a sufficient number of good physicians. To aid them in the accomplishment of their great tasks, is, at present, one of my chief considerations. They can count on the support of the territorial authorities and on the collaboration of the missionaries." Thanks to the school of tropical medicine, young practitioners can acquire the medical knowledge that is indispensable for colonial practice, and a special department gives instruction to sanitary officers, nurses and missionaries.

Inquiry into the Prevailing Diet of Workmen

Dr. Van Temsche has communicated to the Société scientifique d'hygiène alimentaire the results of his inquiry into the prevailing diet of workmen in the city of Mechlin, with a view to comparing the prewar diet with the postwar diet in Belgium. The conclusions that the author of the inquiry has reached are: (1) The quantity of protein consumed per kilogram of body weight has increased in comparison with 1910; (2) the predominance of fats and carbohydrates is still marked, but there has been a slight decrease since 1910; (3) the tendency to resort to a preponderance of animal proteins as compared with vegetable proteins was in evidence in 1923, and (4) the amount of potential energy contained in the food did not, in the majority of cases, correspond to the demands of hard labor. The inquiry showed that (1) workmen do not always regulate their diet according to the nature of their work; (2) workmen do not regulate their diet according to the nutritive value of the foods that they can procure for a given sum; (3) the protein content and the energy-producing value of the diet increase in the same proportion as the circumstances of the household, and (4) the percentage of persons ingesting more than 20 per cent of their protein in the form of meat does not increase in the same proportion as the circumstances of the household. However, the percentage of persons taking more than 50 per cent of their protein in the form of bread decreases in the same proportion as the relative wealth of the household. Finally, the average number of persons taking more than 20 per cent of their protein requirement in the form of meat was appreciably higher in 1923 than in 1910, and, inversely, the percentage of persons who procure more than 50 per cent of their protein from bread is much smaller than in 1910.

Medical Inspection of Schools in Antwerp

For medical inspection of schools in Antwerp the city is divided into districts each containing approximately 2,000 pupils and supervised by a physician. Each physician is assisted by a visiting nurse, whose duty it is to make measurements, to aid in the paper work, to assist in the examinations and the vaccinations, to visit the absent pupils in their homes, and to care for minor cases turned over to her by the physician. The physician must visit each week the schools of his district. The supervision is rendered more effective by the inquiries made in the homes and by the treatment in minor cases (skin diseases, eye diseases) given by the visiting nurse. Special cases are reported to the parents, who can then consult their regular physicians or the hospitals. All the different forms of activity are coordinated by the weekly report of the nurse, countersigned by the physician; by the reports of the domiciliary visits, and by the records required by the Service scolaire of the physicians and the hospitals. The physicians themselves have their gatherings, among themselves or together with the alderman. Pupils leaving school are supplied with record cards giving full medical histories.

RIO DE JANEIRO

(From Our Regular Correspondent)

Sept. 15, 1926.

Malarial Treatment of General Paralysis

Dr. W. Pires discussed before the Neurological Society his experience with malarial therapy in general paralysis. The organism used was *Plasmodium vivax*. The condition of the patients was so serious that in a number of cases cardiac tonics had to be used. After ten malarial attacks, the infection was easily controlled with quinine. Loss of weight, spleen enlargement, subacute icterus, swelling in the ankles, liver and kidney insufficiency and mental confusion with oneiric vagaries were noted. The effect of the malarial therapy was shown only on the mental symptoms. The blood syndrome remained unchanged. The treatment is followed by more remissions than any other. It should therefore be tried in all cases of general paralysis, especially in the early stages. Contraindications must be carefully determined.

Balzer's Dermatomycosis

Prof. E. Rabello described to the Academy of Medicine a case of disseminated vegetative dermatomycosis he has observed with Dr. O. da Fonseca, chief of the Clinical Dermatology Laboratory. Balzer, Gougerot and Bunier described about fourteen years ago a similar case caused by *Mycoderma pulmoneum*. Rabello had in the same year an identical case but did not succeed in isolating the *M. pulmoneum*. Da Fonseca's efforts also failed to find the organism in the present case. The presence of a culturable organism seems doubtful. The two Brabilian cases exhibited, as that of Gougerot, the tuberculoid lesions so common in mycotic processes.

VIENNA

(From Our Regular Correspondent)

Sept. 25, 1926.

Decrease in the Number of Medical Students

The number of students enrolled in the medical department at the University of Vienna for the summer semester 1926 is less than in recent years. Only 2,619 were registered, 218 of whom were women, exclusive of physicians pursuing graduate courses. Apparently, the afflux of students to medicine is lessening. The excess of physicians is becoming serious.

Marked Decrease of Infant Mortality in Vienna

According to the annual report of the municipal public health service of Vienna, infant mortality has steadily decreased since 1923. In 1923, 3,026 children died under 1 year of age, or 137.2 per thousand living births. In 1924, the total number of deaths was 2,724, or 100.7 per thousand births. In 1925, the total number of deaths was reduced to 2,085, or eighty per thousand births. Mortality for the first year of life, therefore, has decreased more than 40 per cent, whereas the number of living births has increased only 18 per cent (26,170 as against 22,420). Progress in municipal hygienic supervision is the main cause for the improvement.

The Hygienic Criteria for the New Municipal Dwellings

The municipal administration of Vienna has erected within the last five years 25,000 new apartment dwellings. Immense flat buildings, from five to seven stories high and containing from 200 to 500 apartments each, have been put up. The main principle has been that every room shall have good ventilation and plenty of sunlight or at least skyshine. Every room in these large flat buildings looks out on a broad street or a spacious court. Every apartment has its own toilet, and many have a separate bathroom. For apartments without bathrooms there are bathing facilities elsewhere in the building. There are also laundry rooms, together with drying rooms and ironing rooms. The apartments are of two distinct types: (1) the smaller apartments (nearly 75 per cent being of this type), which have from 440 to 500 square feet of floor space and consist of a small anteroom, toilet, combination kitchen and living room, and a bedroom, and (2) the larger apartments, with from 530 to 600 square feet of floor space, have one room more. The height of the ceilings is 9⅓ feet; in the kitchen are city water and gas for cooking, and the majority of the windows are toward the east or south; only a few apartments face the north. Each flat building has a courtyard where children may be left in charge of a maid. Most of the later buildings have roof-gardens. Only those buildings that were erected in 1920 and had to be completed in a hurry in order to relieve the distressful situation are lacking in some of the stipulated requirements. In 1917, in Vienna, there were 555,454 individual apartments and dwellings for a population of 2,080,600, 73 per cent of which were termed "small apartments" and consisted of from one to two small rooms, though 9.5 per cent had two or three larger rooms. For this type of apartment there was usually one toilet for three or four families; bath room, gas and electricity were lacking, while the kitchen and often another room had only indirect light from a corridor. In 1917, the average number of persons living in one apartment was 4.58. Now the average has been reduced to 3.16, while the average size of the apartments in the newly erected municipal flat buildings is at least twice that of the old type of tenement house. The population of the city is 167,759 less than in 1917. In spite of this, the demand for apartments has increased, because the decrease in population is due mainly to losses in the lower and the upper age groups. The middle age groups show an increase, and the number of new marriages contracted has greatly increased. The new apartments were allotted primarily to families with children and secondarily to pregnant housewives. In these large municipal flat buildings it is much easier to control the health of children. The municipal health service sends at least once each week specially trained nurses to ascertain the condition of health of all the children. Pregnant women and the new-born receive special attention.

BERLIN

(From Our Regular Correspondent)

Oct. 16, 1926.

Notification of Tuberculous Patients

All figures heretofore published on the number of tuberculous patients have been estimates. The number of tuberculous persons will be more accurately ascertained—at least for Berlin—as a result of a recent agreement entered into by the magistrate and the Berlin leagues of health insurance societies. According to this agreement the *Krankenkassen* will report to the tuberculosis caretaking centers all cases of tuberculosis brought to their attention.

Fee Schedules of Hospitals

Since October 1, the following per diem fee schedules have been in force in the municipal and public hospitals of Berlin: in the third class, adult, $1.36; children, $1. For children with tuberculosis, venereal diseases not inherited, measles, scarlet fever, diphtheria, typhoid, torticollis, acute anterior poliomyelitis, dysentery, pertussis, $0.53. This low tariff holds also for transients, although, in the main, the fees for transients are 25 per cent higher than for residents. In the second class, residents pay $2.62; in the first class, $3.76, children, 25 per cent less. Residents who do not have health insurance pay in the third class only half of the regular fees if their annual income does not exceed 2,100 marks ($499.80). For persons in the same circumstances, who, on the basis of family insurance, have a claim to complete or partial remission of hospital charges, special schedules are in vogue. For healthy infants of residents no charge is made for the first fourteen days of life; from then, up to 1 year, the fee is $0.53, although in exceptional cases the main bureau of health or the district bureau may extend the time beyond fourteen days. Patients who are under observation pay $1.98. In the hospitals for mild cases the fees are 25 per cent less. In the *"Hospitäler"* the per diem fee is $0.77. In the psychopathic hospitals, the fee will be raised to $1.17 as soon as ministerial consent can be secured.

Police Order in Berlin Concerning the Sale of Ground or Chopped Meat

According to a police order, which serves as prophylaxis of paratyphoid affections, it is provided that ground or chopped meat may be prepared, worked over and offered for sale only in closed rooms in butcher shops, unless special circumstances warrant exceptional permits. Chopped meat may be prepared only half an hour before the periods when demand is greatest, and care must be taken to prepare no more than will be needed to meet the immediate demand.

Parental Insurance

A plan for parental insurance, as proposed by Professor Grotjahn, is being discussed. The plan is based on the idea that decrease in the population will result unless a portion of the expense of rearing the children of large families is exacted from unmarried persons and married persons without children. The term "large families" is taken to designate families with more than three living children under 18 years of age. It is proposed that the insurance rate shall be payable as follows: unmarried persons above a given age, the full amount of the tax rate; married persons without children,

75 per cent of the full rate; married persons with one child, 50 per cent; married persons with two children, 25 per cent, while married persons with three children would be exempt from the tax. Grotjahn assumes that, on an average, four persons liable to the tax would pay the amount of the benefit for one child. He suggests that monthly benefits of 60 marks for the fourth child and 10 marks for each further child would be suitable. Grotjahn estimates that not less than an average of 3.46 children must result from every marriage if the present status of the population is to be preserved.

Therapeutic Institutions in Prussia

In 1924, the number of therapeutic institutions in Prussia, exclusive of the Saar region, had undergone a slight decrease over the previous year—2,195 as against 2,202. As compared with 1913, the decrease is considerable, as the loss since that year is represented by 134 institutions, due, in the main, to the cession of territory. Of the 2,195 institutions, 1,816 are public; the remaining 397 are private with more than ten beds. Four new university clinics have been established in Münster.

Although the number of therapeutic institutions has decreased, the number of beds has increased since the war, being 206,516, as against 177,184 in 1913. There were 54.8 beds per 10,000 of population, as against 42.5 in 1913, so that a much larger number are available to the population. The number of patients cared for was 1,606,178, as against 1,534,209 in 1913. In 1924, the sex distribution was 816,325 males, 789,853 females. The percentage of patients cared for in hospitals had considerably increased. The total number of days the patients spent in the hospitals was 49,000,000, as against 43,000,000 in 1913. This represents three days more per patient than in 1913.

JAPAN

(From Our Regular Correspondent)

Oct. 9, 1926.

The Imperial Invention Society

In Tokyo, September 17, the Imperial Invention Society decorated 150 persons, including some workers in medicine or pharmacy. After the ceremony, the committee held a conference and decided that a big sum of money should be raised to establish a laboratory for inventions, and to open an invention exhibition.

The General Meeting of the Chosen Medical Association

In September the fourteenth general meeting of the Chosen (Korean) Medical Association was held in the Keijo (Seul) Medical College, Korea. After the conference, more than a hundred lectures were delivered by the members, including a number of Koreans.

Temporary Quarantine Stations

In order to check the invasion of an epidemic of cholera from Shanghai and southern Manchuria, the Tokyo authorities have established two quarantine stations on Tokyo Bay. Examination of ships en route to Tokyo will be carried on until the end of October.

Epidemic Encephalitis

Encephalitis has been epidemic in the southwestern part of this country since August. More than 120 are dead of some 270 persons affected. The local authorities have been taking every means to check the spread, but still new cases are reported every week.

The Japano-German Culture Society

In the light of the beneficial work done by the "Research Institute of Japanese Sciences" in Berlin, Viscount Shimpei Goto and others have lately decided to establish an institution, "the Japano-German Culture Society." The new society is mainly intended for reciprocal study and research in sciences in Germany and Japan, but will have nothing to do with political or commercial affairs. It will publish scientific researches, translate reference books, respond to personal inquiries, and encourage or direct scientists. Two directors, a German and a Japanese, will superintend the work of the institution.

Japanese Professors at the General Meeting of the Practitioners' Association in Peking

The eighteenth general meeting of the Practitioners' Association (of European and American physicians in China) was held in Peking from August 31 to September 8. Among about 300 who attended were three Japanese physicians: Prof. Dr. Shiga, Prof. Dr. Kubota and Prof. Dr. Miwa.

School Nurses

According to the school sanitary bureau of the educational department, 504 nurses were employed in 325 schools in this country in 1925, which represents an increase of 111 nurses and 118 schools over 1924. Of these nurses, 114 are qualified for both midwifery and nursing, 294 for nursing, and the rest for teachers, assistant nurses and the like. They take care of every aspect of child hygiene and help the physicians perform medical examinations. Sometimes they visit the children's homes and accompany them in school excursions.

First General Meeting of the Japan Epidemic Society

The Japan Epidemic Society, established last summer, held its first general meeting in the Tokyo Imperial University, September 22. The opening address was delivered by Dr. K. Niki, chairman of the committee. Several proposals were discussed by the committee, and then lectures were rendered by Drs. K. Watanabe, T. Sato and R. Inada.

Investigation of "Sanocrysin"

The Japanese committee for the investigation of "Sanocrysin" finds that it has no bactericidal action against the tubercle bacillus, in such a concentration as Møllgaard stated, or even in so high a concentration as 1 per cent. Some experimental animals had slighter tuberculous changes than those of the control animals, but the larger number had changes the same as or even severer than the controls. Experiments with fifty cattle, made strictly after Møllgaard's method, showed one good result, but the remaining forty-nine animals had the same tuberculous changes as the controls, or even severer ones. The animal experiments proved that "Sanocrysin" was without bactericidal power in vivo. Furthermore, various immunologic experiments demonstrated that Møllgaard's so-called antituberculous serum had had no neutralizing effect against the toxin of the tubercle bacillus.

If "Sanocrysin" had certain ameliorating effects, it was considered merely the effect of a kind of stimulation therapy. If "Sanocrysin" should be employed for its stimulation effect, the following should be watched for: changes in the kidneys, changes in the heart muscle and the endocardium, edema, dyspnea, deranged digestion, decrease of the body weight, and skin eruptions. Rashes are not the effect of Møllgaard's so-called bacterial toxin, but of intoxication by "Sanocrysin" itself.

Trial clinical use of "Sanocrysin," although it has not yet come to a conclusion, indicates that "Sanocrysin" is not a specific but one of the so-called stimulative agents. The use of such a large dose as Møllgaard gives should be abandoned. If the preparation should after all come into use, the start should be made with an infinitesimally small dose.

From results so far obtained use of this drug is not recommended. Should it be tried in human cases after all, the user must employ it with great care and a deep sense of responsibility.

Marriages

JOSEPH L. BENTON, Appleton, Wis., to Miss Doris M. Buchanan of New Auburn, September 25.

NAT HAWKINS COPENHAVER to Miss Mary Amelia Slack, both of Bristol, Tenn., October 16.

FILIP C. FORSBECK, Montgomery, Ala., to Miss Frances Anderson of Atlanta, October 23.

HAROLD B. HERMANN to Miss Estelle Piesen, both of Brooklyn, October 20.

AARON S. SPEIER to Miss Adele Aach, both of Lincoln, Neb., October 16.

Deaths

Emanuel Charles Fleischner ✠ San Francisco; Yale University School of Medicine, New Haven, 1904; clinical professor of pediatrics, University of California Medical School; formerly member of the House of Delegates, and secretary and chairman of the Section on Diseases of Children of the American Medical Association; member of the American Pediatric Society, the American Society for Clinical Investigation and the Society of American Bacteriologists; on the staffs of the Children's and Mount Zion hospitals; aged 44; died, October 11, at St. Mary's Hospital, Rochester, Minn., following an operation for carcinoma of the sigmoid.

Robert Grigg Reese ✠ New York; Medical Department of the University of the City of New York, 1891; professor of clinical surgery, department of ophthalmology, Cornell University Medical College; member of the American Academy of Ophthalmology and Oto-Laryngology and the American Ophthalmological Society; on the staffs of the New York Eye and Ear Infirmary, Bellevue, Memorial, St. John's, Riverside, Nursery and Child's, and Booth Memorial hospitals; aged 60; died, October 18, of meningitis following an operation for sinusitis.

William Anthony Hitschler ✠ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1892; formerly clinical professor of laryngology and rhinology, Temple University Department of Medicine, Philadelphia; at one time on the staffs of the Germantown and Garretson hospitals and the Philadelphia Polyclinic; aged 55; died, September 1, at the Samaritan Hospital, of heart disease.

Richard Allen Woodruff ✠ Pittsfield, Mass.; Albany Medical College, 1886; Bellevue Hospital Medical College, New York, 1886; formerly member of the board of health; on the staff of the House of Mercy Hospital; aged 62; died, October 13, of cerebral hemorrhage.

Harry Herbert Sanderson, Johnstown, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1900; aged 50; died, September 7, at the Lee Hosptial, of intestinal obstruction following an operation for ventral hernia.

Joseph B. Scott ✠ Marceline, Mo.; Vanderbilt University School of Medicine, Nashville, Tenn., 1912; secretary and past president of the Linn County Medical Society; aged 41; died, August 11, following a long illness.

George Nelson Stoney, Augusta, Ga.; Howard University School of Medicine, Washington, 1887; aged 61; died, October 5, at the home of his daughter in Norfolk, Va., of carcinoma of the stomach and liver.

Robert G. Jackson, Brunswick, Ga.; Medical Department University of Louisiana, New Orleans, 1882; aged 64; died, September 24, of paralysis, following a cerebral hemorrhage which occurred some months ago.

Newell Kelly Foster, Oakland, Calif.; Long Island College Hospital, Brooklyn, 1878; secretary of the California State Board of Health, 1901-1909; aged 77; died, September 9, of heart disease and arteriosclerosis.

Charles F. Underwood ✠ Newark, N. J.; Bellevue Hospital Medical College, New York, 1874; formerly on the staff of the Newark City Hospital; aged 76; died, October 19, of carcinoma of the pancreas.

James Christie, St. John, N. B., Canada; Jefferson Medical College of Philadelphia, 1858; Civil War veteran; formerly on the staff of the General Public Hospital; aged 95; died, September 10, in Boston.

William Franklin Gates, Oroville, Calif.; American Medical College, St. Louis, 1883; for many years county physician; state senator; aged 68; died suddenly, August 2, of cerebral hemorrhage.

Egbert Henry Grandin, New York; Medical School of Harvard University, Boston, 1880; formerly on the staffs of the French and Columbus hospitals; aged 71; died, September 29.

William A. Farr, Miltonvale, Kan.; University Medical College of Kansas City, Mo., 1898; aged 55; died, October 10, at Long Beach, Calif., of arteriosclerosis and nephritis.

Harvey N. Rogers, Farmington, Minn.; Eclectic Medical College of Pennsylvania, Philadelphia, 1865; Civil War veteran; aged 89; died, in September, of heart disease.

Hiram C. Castor, Evanston, Ill.; Medical College of Indiana, Indianapolis, 1890; served during the World War; aged 60; died suddenly, October 15, of heart disease.

Harriette A. Howe, Chicago; Northwestern University Woman's Medical School, Chicago, 1888; aged 75; died, July 28, at Northampton, Mass., of chronic nephritis.

William J. Pinson, Eldorado, Ark.; University of Arkansas Medical Department, Little Rock, 1882; aged 66; died, September 25, of acute nephritis and chronic malaria.

Robert Lee Gray ✠ Ben Wheeler, Texas; Kentucky School of Medicine, Louisville, 1898; formerly county health officer; aged 49; died, October 22, of cerebral hemorrhage.

J. O. Davis, Moran, Texas (licensed, Texas, under the Act of 1907); aged 69; died, October 8, at the Stamford (Texas) Sanitarium, following an operation for gallstones.

Henry Phelps Monroe, Waverly, Kan.; College of Physicians and Surgeons, Keokuk, Iowa, 1883; aged 71; died, September 24, of Hodgkin's disease.

Isaac Wayne Mendelsohn, Wilkes-Barre, Pa.; College of Physicians and Surgeons, Baltimore, 1905; aged 53; died, September 14, at Atlantic City.

Stanislaus J. Lachajewski, Detroit; Detroit College of Medicine and Surgery, 1897; aged 55; died, September 15, of pulmonary tuberculosis.

Alphonsus Hilary Gannon, New Waterford, Nova Scotia, Canada; Queen's University Faculty of Medicine, Kingston, Ont., 1910, died, August 23.

Elisha Atwood McCollister, Mechanic Falls, Maine; Medical School of Maine, Portland, 1882; aged 74; died, October 11, of arteriosclerosis.

Joseph Alexander Cousineau, Montreal, Que., Canada; University of Montreal Medical Faculty, 1904; died recently, following a long illness.

Richard Carl Lawrenz, Dayton, Ohio; Ohio Medical University, Columbus, 1906; aged 46; died, September 5, of mushroom poisoning.

A. A. Raub, Topeka, Kan. (licensed, Kansas, 1901); Civil War veteran; aged 89; died, October 3, at St. Francis Hospital, of senility.

Henry C. Bone, Grand River, Iowa; Marion-Sims College of Medicine, St. Louis, 1891; aged 57; died, September 15, of heart disease.

Claude Allen Link, Maywood, Ill.; University of Illinois College of Medicine, Chicago, 1909; aged 47; died, October 18, of pneumonia.

Ella Amelia Ludden, Chicago; Dunham Medical College, Chicago, 1901; aged 69; died, September 22, of cerebral hemorrhage.

Charles Darwin Sidle ✠ Conroy, Ohio; Rush Medical College, Chicago, 1901; aged 50; died, October 18, of heart disease.

John B. Lapsley, McAfee, Ky.; Jefferson Medical College of Philadelphia, 1864; aged 85; died in September, of senility.

Frank Joseph Sebald, Baltimore; University of Heidelberg, Germany, 1890; aged 69; died, October 5, of heart disease.

Edwin Taswell Lewis, Erwin, Tenn.; University of Nashville Medical Department, 1874; aged 77; died, August 30.

John Chalmers ✠ Buffalo; University of Buffalo Department of Medicine, 1894; aged 54; died, October 11.

John Garratt Reid, Johnson, Ark.; Chicago Medical College, 1877; aged 79; died, September 27.

Richard F. Hulett, Galena, Mo.; St. Louis Medical College, 1870; aged 74; died, October 14.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

MORE FAT CURE FAKERY

"Elfin Fat Reducing Gum Drops" and "Slends Fat Reducing Gum"

The quacks who prey on women who are overweight or who have convinced themselves that they are overweight, have done a thriving business in the past few years. Fortunes have been made in the sale of nostrums, most of which are utterly worthless, and a few of which are distinctly dangerous, sold for their alleged anti-fat properties. The first "obesity cures," and these are still in the majority, came in pill or tablet form. Then, because the exploiters seemed to be immune to the penalties of the National Food and Drugs Act and there was so much easy money to be made in the business, other varieties of anti-fat products appeared on the market. There were "reducing creams" to be rubbed on the surface of the body; "reducing soaps," which were said to wash away the fat;

salts to put in the bath, sold under the claim that they would melt this too, too solid flesh; and, finally, chewing gums, whose use was said to change in short order a stylish stout to a svelte-like lissomeness.

Among the more widely advertised "obesity cures" of the chewing gum type were "Silph," "Slends" and "Elfin," and because of the inquiries received about these humbugs it was decided to analyze the products so that the medical profession and the public might be given the facts. Hardly had work started on these nostrums when the government, through the Post Office Department, issued a fraud order against the concern that put out "Silph Reducing Gum," and the results of the government's work were given in detail in THE JOURNAL of August 28, 1926. It will be remembered that Silph Chewing Gum contained thyroid, phytolacca, bladderwrack, leptandrin, pepsin and pancreatin.

Slends Reducing Gum.—The A. M. A. Chemical Laboratory has now completed its analyses of "Slends Fat Reducing Chewing Gum" and "Elfin Fat Reducing Gum Drops." Slends is put on the market either by Slends, Inc., or by Heath Products, Inc., of New York City, which seems to have for its president one E. M. Heath, whose name and picture appear in the advertising. It is claimed for Slends that the stuff "contains absolutely no thyroid or any other harmful ingredient; can be safely given to children." At the same time it is admitted that the drug that is used in the product is extract of pokeroot (Phytolacca decandra) while the trade package admits the presence of phenolphthalein. Like all quack remedies for obesity, the "joker" lies in the instructions that go with the sale of the stuff. While the idea is given that Slends is in itself sufficient to reduce weight the purchaser finds, after parting with her money, that she is to walk vigorously five miles a day in the open air and go through certain exercises that are outlined. In addition, diet suggestions are given and the victim is told not to eat potatoes more than three times a week, to use bran, whole wheat or rye bread, and to drink water plentifully before, after and during meals.

The danger of incorporating so potent a drug as phytolacca in the enticing form of chewing gum and under the claim that it is harmless and can safely be given to children seems to be ignored by the exploiters of Slends. In a letter written by the concern a few weeks ago, while admitting that "pokeroot is regarded as poisonous taken in large quantities" the concern was "quite willing to go on record" as guaranteeing that the product was harmless if taken in reasonable doses. The letter added: "We have had our product analyzed by the Dean of Materia Medica on Botany of Columbia University, who has passed same as harmless." The A. M. A. Chemical Laboratory made the following report on the product:

LABORATORY REPORT

"One original package of 'Slends Medicated Gum Delicious' (Slends, Inc., 332 West 21st St., New York) was submitted to the A. M. A. Chemical Laboratory for examination. The package contained 50 pink, diamond-shaped pieces of a candy-coated chewing gum; their weight varied about 22 per cent, i. e., from 2.2 Gm. (approximately 34 grains) to 2.7 Gm. (approximately 42 grains), the average weight of all pieces was 2.46 Gm. (approximately 38 grains).

"Qualitative tests indicated the presence of sucrose (cane sugar), a volatile oil suggestive of wintergreen and phenolphthalein; some vegetable extractive was also indicated. Alkaloids, starch, iodides, organic iodine compounds, heavy metals, organic acids and emodin-bearing drugs were not found. The amount of ash was 1.39 per cent; on drying at 100 C., the loss in weight was 2.71 per cent. The amount of phenolphthalein present was found to be 2.76 per cent.

"From the foregoing it may be concluded that each piece of Slends is a piece of chewing gum (chicle) coated with varying amounts of a mixture containing essentially sucrose and phenolphthalein, flavored and containing a small amount of vegetable extractives. The average amount of phenolphthalein was 1 grain to each piece."

From the chemists' report, it is quite obvious that the only action that Slends Medicated Gum would have on the human body is that of a laxative, due to the presence of the phenolphthalein. If phytolacca is present at all, it is there in quantities that, as the manufacturer claims, are harmless. As every physician knows, there is not the slightest scientific evidence to show that phytolacca in therapeutic quantities has any effect on obesity other than what might follow from the disturbance that it produces on the digestive apparatus. While phytolacca has long been used as an ingredient of fake obesity cures, in nearly every instance, it is found to be incorporated in such small quantities as to produce no physiologic effect whatever. It is undoubtedly employed by quacks simply because, in the past, the stuff was credited, without any evidence, with having certain virtues as an anti-fat.

Elfin Fat Reducing Gum Drops.—These, described as "The Chew and Grow Thin Treatment," are put on the market by Pep-Giving Products Company, Inc., New York City. Thus the advertising material:

"A safe reducing agent that gets rid of fat by elimination. Elfin acts directly on the fat-cells and leaves no trace of its action, such as flabby muscles, wrinkles, etc. Made in a delicious candy-coated gum-drop form. Diet suggestions accompany full treatment boxes. Positive results guaranteed if directions are followed."

With the trade package come certain diet suggestions, which alone, if followed, might result in a loss of weight. The purchaser is told to drink neither milk nor other beverages for the first three days but to use orange juice. She is also told to eat only one-half the amount of food that she has been in the habit of eating. She is told further to eat no puddings, pies, ice cream or candy, no butter or oil, mayonnaise or fatty meats. It is suggested that no bread be eaten

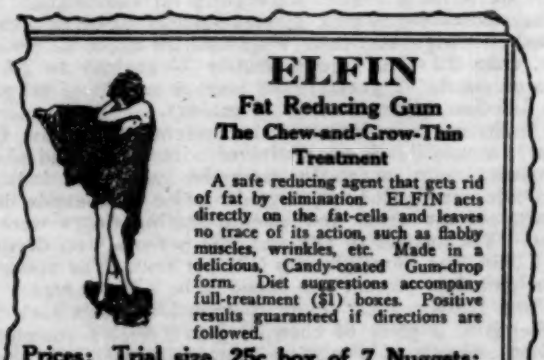
at all, but that if eaten, whole wheat, gluten or bran bread be used. Obviously, whatever reduction may take place under this regimen is due, not to the chewing of Elfin, but to the dietary restrictions. The Association's Chemical Laboratory gives the following report of its analysis of Elfin:

LABORATORY REPORT

"One original package of 'Elfin—Fat Reducing Gum Drops' (Pep-Giving Products Co., 256 West 116th St., New York) was submitted to the A. M. A. Chemical Laboratory for examination. The package contained 33 white candy-coated gum drops or 'nuggets'; their weight varied 100 per cent, i. e., from 1.8 Gm. (approximately 28.5 grains) to 3.6 Gm. (approximately 57.0 grains), the average weight of all 'nuggets' was 2.72 Gm. (approximately 42.0 grains). No statement as to composition was given on the trade package or in the accompanying circulars.

"Qualitative tests indicated the presence of sucrose, a volatile oil suggestive of peppermint, and phenolphthalein. Alkaloids, starch, iodides, organic iodine compounds, heavy metals, organic acid and emodin-bearing drugs were not found. A specimen ignited at 950 C., for two hours, yielded 0.2 per cent ash. The amount of phenolphthalein present was found to be 3.16 per cent.

"From the foregoing it may be concluded that each 'nugget' of 'Elfin—Fat Reducing Gum—The Chew and Grow Thin Treatment' is a 'gum-drop' (not chewing gum or chicle) coated with varying amounts of a mixture containing essentially sucrose and phenolphthalein flavored with peppermint. The average amount of phenolphthalein is 1.4 grains to each gum-drop."


ELFIN
Fat Reducing Gum
The Chew-and-Grow-Thin
Treatment
A safe reducing agent that gets rid of fat by elimination. ELFIN acts directly on the fat-cells and leaves no trace of its action, such as flabby muscles, wrinkles, etc. Made in a delicious, Candy-coated Gum-drop form. Diet suggestions accompany full-treatment ($1) boxes. Positive results guaranteed if directions are followed.
Prices: Trial size, 25c box of 7 Nuggets;
Regular, $1 box of 32 Nuggets.

Sugar and phenolphthalein sold under the claim that it "acts directly on the fat-cells"! When people can be fooled thus easily, is it any wonder that shrewd fakers look with contempt on those who work for a living?

Teaching in Sciences in Medical Course Most Important.—In my day far too much time was spent in anatomy, and a needlessly intricate knowledge of some of its branches was required of us. The years of training might now be profitably spent in learning more of physiology, biochemistry, pathology, and in saturating the surgeon in his plastic years with the faith and the practice of the religion of research. The science of surgery in days to come will be advanced by men trained in the methods and imbued with the spirit of experimental research, though it will no doubt continue to be practiced to their profit by those who are merely craftsmen. The surgeon is not simply the tool of other minds; he is not merely required to carry out the mechanical and routine details of a procedure the necessity for which, and the plan of which, others have decided. It is he who must take pains so to prepare or to rehabilitate his patient that the anxieties, the discomforts and the perils shall fall as lightly as possible on one who at the moment is perhaps less than ever able to bear them. The operation itself is but one incident, no doubt the most dramatic, yet still only one in the long series of events which must stretch between illness and recovery.—Moynihan, Berkeley: *Lancet* **2**:794 (Oct. 16) 1926.

Correspondence

TREATMENT OF PERNICIOUS ANEMIA BY A SPECIAL DIET

To the Editor:—In their important article "Treatment of Pernicious Anemia by a Special Diet" (THE JOURNAL, August 14), Minot and Murphy honor me by quoting one of my articles in relation to deficiency as a cause of pernicious anemia. The authors, however, misunderstood my work and this wants rectification. Though in the article to which they refer and in other publications I defended the view that pernicious anemia must be caused by deficiency, I never thought or wrote that I thought it was caused by lack of a single known or still unknown vitamin. Pernicious anemia is a complicated symptom complex and therefore it is, in my opinion, caused by a lack of different substances in the food, which are to be found in a diet rich in complete proteins (meat, milk, yellow of eggs) and rich in the known vitamins. This led me to treat pernicious anemia with diets rich in underdone meat, yellow of eggs, milk, oranges, tomatoes, cod liver oil and vegetables. With these diets I had remarkably good results in different cases of sprue, with severe anemia of the pernicious type, and in cases of true pernicious anemia, of which I reported one with cases of sprue anemia in an article in the *Lancet* (**1**:75 [Jan. 10] 1925). It seems that this article was overlooked by the authors.

C. ELDERS, The Hague.

"BURNS AND THE SUPRARENALS"

To the Editor:—In your editorial comment on "Burns and the Suprarenals" (THE JOURNAL, October 16), you cite the work of Hartman, Rose and Smith, published in the September issue of the *American Journal of Physiology,* in relation to an increased output of epinephrine from the suprarenals within a few minutes after the production of burns. May I call your attention to the May issue of the *American Journal of the Medical Sciences,* in which my article "The Pathogenesis of Death from Burns" appears. In this article I clearly demonstrate that an increase in epinephrine output occurs immediately after burns, which is later followed by a decrease. Definite pathologic changes in the suprarenals are also reported.

HARRY M. GREENWALD, M.D., Brooklyn.

MAGNESIUM SULPHATE IN ECLAMPSIA

To the Editor:—In THE JOURNAL, October 9, a correspondent's inquiry as to the intravenous use of magnesium sulphate in eclampsia is answered, in part, as follows: "It is always advisable to have 5 cc. of a 10 per cent solution of calcium chloride available for intravenous injection should magnesium sulphate be given intravenously, as the effective dose of magnesium sulphate closly approaches the fatal dose." While this may be true where the magnesium sulphate is used to produce anesthesia, it is certainly not so in the dosage which I have been using for eclampsia; namely, from 20 to 30 cc. of a 10 per cent solution. While a solution of calcium chloride has been available to combat a possible respiratory paralysis, occasion has not arisen for its use. In our last report (Lazard, Irwin and Vruwink: *Am. J. Obst. & Gynec.* **12**:104 [July] 1924) we analyzed the results in a series of 142 collected cases. We have records of more than 500 intravenous injections without any untoward effects that could be attributed to the magnesium sulphate. We are convinced that the drug can be used intravenously in effective dosage with perfect safety. Your answer further states that "it is safer and probably quite as efficient to inject the magnesium

sulphate intramuscularly, as may be gathered from the article by Lee Dorsett."

The therapeutic effect attained by intramuscular injection of magnesium sulphate, viz., control of convulsions, reduction of edema and intracranial tension and stimulation of diuresis, as reported in Dorsett's article, must be obtained by the absorption of the drug into the circulation.

These effects were reported by me in my first paper on the intravenous use of magnesium sulphate (*Am. J. Obst. & Gynec.* **9**:178 [Feb.] 1925). It stands to reason, therefore, that the injection direct into the circulation is much surer and quicker in its effects.

The only consideration that would favor the intramuscular injection would be its greater safety, and our records show that the intravenous use in the dosage we have been using is effective and absolutely safe.

E. M. LAZARD, M.D., Los Angeles.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

INDUCTION OF PREMATURE LABOR

To the Editor:—Would it be advisable to use quinine by mouth followed by pituitary hypodermically to induce premature labor in a case of contracted pelvis (external conjugate, 16 cm.), pregnancy in the thirty-sixth or thirty-eighth week? The woman is 5 feet and one-half inch (152 cm.) in height; the blood pressure and urine are normal; the health is good. The use of quinine and pituitary was advised in THE JOURNAL, July 17, page 192, though not in this relation. Please omit my name.

M.D., New Jersey.

ANSWER.—Nowadays obstetricians seldom resort to the induction of premature labor for contracted pelves: first, because the large majority of patients with contracted pelves deliver live babies without much trouble; secondly, because those patients that cannot deliver their babies spontaneously can have a cesarean section, especially of the cervical type, performed early in labor without much risk, and thirdly, because induction of labor has a definite maternal and especially fetal mortality and morbidity. It is a good general rule never to use pituitary preparations before the baby is delivered except in cases of abruptio placentae. Pituitary preparations with or without quinine have been used for the induction of labor at term with fairly good results; but the procedure is not without danger. The same drugs given a few weeks before term are seldom effective. Pituitary preparations are most potent during labor, less effective just before term, and almost entirely ineffectual during the middle of pregnancy. However, both pituitary substances and quinine are very effective in cases in which the uterus is attempting to empty itself or has partially emptied itself. Both forms, namely, inevitable and incomplete abortion, in reality are forms of miniature labor.

When premature induction of labor is necessary, rupture of the membranes may suffice to start labor pains or it may be advisable to pack the cervical canal with gauze. If labor pains do not begin after from eighteen to twenty-four hours, the gauze is removed and a colpeurynter is inserted into the lower uterine segment.

PAIN IN TESTICULAR NEURALGIA

To the Editor:—May not pain in testicular neuralgia be referred entirely to the internal ring? There are some abdominal conditions which give pain referred to the testis. At which places may a pathologic testis refer pain? Kindly outline a good treatment for this condition. Please omit my name.

M.D., West Virginia.

ANSWER.—Neuralgia of the testis is quite often produced by the impulse of prolapsed intestines hitting the cord, which is especially true in interstitial inguinal hernias. The diagnosis is verified if the application of a well fitting truss alleviates the situation. Chronic prostatitis and malignant tumors of the prostate quite often produce persistent pain in one or both testes, with occasional exacerbations. A testis retained within the abdomen or in the inguinal canal may be the seat of disagreeable sensations that may reach the height of actual pain. Extensive varicocele is also accused of being the cause of testicular neuralgia. Rational treatment will deal with the cause: repair of the inguinal canal, extirpation of varicose veins, placing an undescended testis into the scrotum or removing it in case of malignancy, and treatment of the causative prostatitis. In malignant tumors of the prostate, the success of the treatment will depend on the operability of the case. If it should be inoperable, of course the treatment can be a palliative one only.

BITTERSWEET POISONING—RED CROSS EMBLEM—ELECTROTHERAPY

To the Editor:—1. I have heard the statement a number of times that the red berries of the common bittersweet (dulcamara) are poisonous. Is this true? Are there any authentic cases of serious or fatal poisoning from this cause? 2. Please state the regulations for the use of the Red Cross emblem. Does a physician who is not an officer of the Red Cross have a right to use the emblem on his car? 3. After listening to the electrotherapeutic specialists and the promoters of the late models of expensive electrical apparatus, the general practitioner is left very much confused as to the real value of such treatment. Some are inclined to swallow it all and others dismiss the matter as a hopeless tangle. Kindly inform me whether there is any work published, written by a reliable, unprejudiced author who has threshed the wheat out of all this straw. Something along the line of the valuable little books published by the American Medical Association—such, for instance, as the Handbook of Therapy, or Dr. Osborne's work on the heart.

EDWIN H. MUSSON, M.D., Norborne, Mo.

ANSWER.—1. The following is taken from the U. S. Dispensatory, edition 21: "All portions of the plant (dulcamara [bittersweet]) are active. Fatal results from the eating of the berries by a child have been recorded. In large doses dulcamara causes burning in the throat with nausea and vomiting and dizziness; the pulse becomes slow, the pupils dilated and often occurs general weakness with convulsive muscular movements." Dulcamara was formerly used as an "alterative," but according to the Epitome of the U. S. Pharmacopeia and National Formulary has no established indications for its use.

2. Section 7700, U. S. Compiled Statutes, 1916, provides, in part, that:

> From and after the passage of this act it shall be unlawful . . . for any person to wear or display the sign of the Red Cross or any insignia colored in imitation thereof for the fraudulent purpose of inducing the belief that he is a member of or an agent for the American National Red Cross. . . . If any person violates the provision of this section he shall be deemed guilty of a misdemeanor, and upon conviction in any federal court shall be liable to a fine of not less than one or more than five hundred dollars, or imprisonment for a term not exceeding one year, or both, for each and every offense.

For information with respect to what constitutes an officer in the American National Red Cross, or what regulations it may have adopted relative to the use of its insignia by members or officers, may we refer you to that association.

3. THE JOURNAL will publish soon a series of articles on physical therapy, in which the Council on Physical Therapy will endeavor to impart scientific and unbiased information. See also a "Report of Committee on Present Status of Physical Therapy," which appeared in THE JOURNAL, October 16, page 1302.

HERPES ZOSTER

To the Editor:—Will you be kind enough to let me know of any form of treatment that can possibly modify the monthly recurrence of herpes zoster of the lip? It recurs in a patient of mine regularly with the menstrual period. Would you also be kind enough to let me know of any form of treatment that would shorten the duration and prevent the formation of scar tissue? I do not ask for a specific, but should like to know various forms of treatment which have been tried and have proved of use in some cases.

LEONARD BLUMGART, M.D., New York.

ANSWER.—Herpes of the lips is a manifestation of a systemic disturbance. It is occasionally seen as a rather regular accompaniment of menstruation. Innumerable local applications are suggested from time to time to prevent herpes, a fact in itself that indicates that none of them are very satisfactory. It is possible that they may be aborted by certain local applications when they first appear. Spirit of camphor has a popular reputation for this and may be of some use. A more likely useful application for aborting them when they appear is an astringent such as from 0.5 to 1 Gm. of zinc sulphate to 100 cc. of water, to be dabbed on two or three times a day the first day and once or twice after that. We doubt whether there is any practical local method of preventing their development.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, Jan. 4. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.

DELAWARE: Wilmington, Dec. 14-16. Pres., Dr. H. W. Briggs, Wilmington.

IOWA: Des Moines, Nov. 16-18. Commissioner, Board of Health, Dr. Henry Albert, Des Moines.

KENTUCKY: Louisville, Dec. 7. Sec., Dr. A. T. McCormack, Louisville.

MARYLAND: Baltimore, Dec. 14-17. Sec., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore.

MISSOURI: Kansas City, Nov. 16-18. Sec., Dr. James Stewart, Jefferson City.

MINNESOTA: Minneapolis, Jan. 4-6. Sec., Dr. A. E. Comstock, 636 Lowry Bldg., St. Paul.

NORTH DAKOTA: Grand Forks, Jan. 4-7. Sec., Dr. G. M. Williamson, Grand Forks.

OHIO: Columbus, Dec. 1-3. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.

OREGON: Portland, Jan. 4-6. Sec., Dr. M. K. Hall, 816 Pittock Block, Portland.

TEXAS: Fort Worth, Nov. 16-18. Sec., Dr. T. J. Crowe, 918-919 Mercantile Bank Bldg., Dallas, Texas.

UTAH: Salt Lake City, Jan. 4-5. Director, Mr. J. T. Hammond, 412 State Capitol Bldg., Salt Lake City.

VIRGINIA: Richmond, Dec. 7-10. Sec., Dr. J. W. Preston, 720 Shenandoah Life Bldg., Roanoke.

WEST VIRGINIA: Morgantown, Nov. 23. Commissioner, The Public Health Council, Dr. W. T. Henshaw, Charleston.

Wisconsin June Examination

Dr. Robert E. Flynn, secretary of the Wisconsin Board of Medical Examiners, reports the written and practical examination held at Milwaukee, June 29-July 1, 1926. The examination covered 18 subjects and included 100 questions. An average of 75 per cent was required to pass. Of the 87 candidates examined, 85, including 2 osteopaths, passed and 2 failed. Thirteen candidates, including 1 osteopath, were licensed by reciprocity. The following colleges were represented:

PASSED	Year Grad.	Per Cent
Northwestern University Medical School	(1925) (1926) 85, 87, (1926)* 84	88.2,
Rush Medical College	(1925) 88, 93, (1926) 85, 89, 89, 90, (1926)* 88, 90	85,
University of Michigan Medical School	(1924) 84, 86, (1925)	88
University of Minnesota Medical School	(1924)	87
Washington University School of Medicine	(1924) (1925) 85, 86, (1926) 87	90,
University of Nebraska College of Medicine	(1925)	84, 88
University of Buffalo Department of Medicine	(1926)	84
Eclectic Medical College, Cincinnati	(1926)	83
University of Pennsylvania School of Med.	(1925) 85, (1926)	83
Marquette University School of Medicine	(1926)* 76, 79, 79, 80, 81, 81, 82, 82, 82, 83, 83, 83, 83, 84, 84, 84, 84, 84, 84, 84, 84, 85, 85, 85, 85, 85, 85, 86, 86, 86, 86, 86, 86, 86, 86, 87, 87, 87, 87, 87, 87, 88, 88, 88, 88, 88, 89, 89, 89	83,
University of Manitoba Faculty of Medicine	(1925)	87
Foochow Union Medical College, China	(1919)†	75
University of Freiburg, Germany	(1914)†	80
University of Munich, Germany	(1920)†	82
University of Wurzburg, Germany	(1923)†	80
University of Athens, Greece	(1916)†	75
Osteopath		82, 83

FAILED	Year Grad.	Per Cent
Marquette University School of Medicine	(1926)	70
University of Vienna, Austria	(1919)†	70

LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery	(1917)	Illinois
Northwestern University Medical School	(1902), (1906)	Illinois
Rush Medical College	(1925)	Illinois
University of Illinois College of Medicine	(1925)	Illinois
Detroit College of Physicians and Surgeons	(1916)	N. Dakota
University of Michigan Medical School	(1922)	Michigan
St. Louis College of Physicians and Surgeons	(1919)‡	Tennessee
Washington University School of Medicine	(1923)	California
University of Pennsylvania School of Medicine	(1923)	New York
Woman's Medical College of Pennsylvania	(1901)	Penna.
Meharry Medical College	(1925)	Tennessee
Osteopath		Illinois

* These candidates have finished their medical courses and will receive their M.D. degrees on completion of a year's internship in a hospital in 1927.

† Verification of graduation in process.

‡ The board refused reciprocity to this applicant in 1925 because the medical school was not recognized, but he is now recognized because of subsequent special work taken at the Milwaukee County Hospital as a visitor with the senior students of Marquette University School of Medicine.

Michigan June Examinations

Dr. Guy L. Connor, secretary of the Michigan Board of Registration in Medicine, reports the written examinations held at Ann Arbor, June 8-10, and Detroit, June 14-16, 1926. The examinations covered 14 subjects and included 100 questions. An average of 75 per cent was required to pass. Of the 239 candidates examined, 227, including 34 chiropractors and 1 undergraduate, passed and 12, including 10 chiropractors, failed. The following colleges were represented:

PASSED	Year Grad.	Per Cent
Loyola University School of Medicine	(1926)	87, 87
Northwestern University Medical School	(1925)	86
Rush Medical College	(1919) 81.9, (1926) 84.3, 85,	85.7,
University of Illinois College of Medicine	(1926)	88
Indiana University School of Medicine	(1926)	89
State University of Iowa College of Medicine	(1926)	85
Johns Hopkins University Medical Dept.	(1919) 82.8, (1925)	80.8
University of Maryland School of Medicine	(1924)	80.1
Boston University School of Medicine	(1925)	81
Harvard University	(1924) 84.8, (1925)	85
Detroit College of Medicine and Surgery	(1926)* 82, 82, 82, 83, 83, 84, 84, 84, 84, 84, 84, 84, 84, 84, 84, 85, 85, 85, 85, 85, 86, 86, 86, 86, 86, 86, 86, 87, 87, 87, 87, 87, 87, 87, 88, 88	86.8 81,
University of Michigan Medical School	(1925) (1926) 79.6, 79.9, 80.4, 80.5, 80.6, 80.7, 81, 81, 81.1, 81.4, 81.8, 81.8, 82.2, 82.2, 82.3, 82.3, 82.3, 82.5, 82.6, 82.6, 82.7, 82.8, 82.8, 82.8, 82.9, 83, 83.1, 83.1, 83.2, 83.2, 83.3, 83.3, 83.4, 83.4, 83.5, 83.5, 83.5, 83.5, 83.6, 83.6, 83.6, 83.7, 83.7, 83.7, 83.8, 83.9, 84, 84.1, 84.2, 84.2, 84.3, 84.4, 84.4, 84.4, 84.5, 84.6, 84.6, 84.6, 84.7, 84.7, 84.7, 84.7, 84.7, 84.8, 84.8, 84.8, 84.8, 84.9, 84.9, 84.9, 85, 85, 85, 85.1, 85.2, 85.2, 85.2, 85.3, 85.4, 85.4, 85.6, 85.7, 85.7, 85.8, 85.8, 86, 86, 86, 86.1, 86.2, 86.2, 86.3, 86.3, 86.3, 86.3, 86.6, 86.7, 87.7, 88.1, 88.5, 89.1, 89.2, 89.3	82.7,
Washington University School of Med.	(1920) 81.1, (1925)	83.9
University of Buffalo Department of Medicine	(1926)	85.4
University of Oklahoma School of Medicine	(1925)	83
Jefferson Medical College of Philadelphia	(1926)	85.8
Marquette University School of Medicine	(1926)*	82.1
University of Alberta Faculty of Medicine	(1925)	82.9
University of Toronto Faculty of Medicine	(1909) (1911) 77, (1915) 86.4, (1916) 84, (1919) 83, (1921) 81, (1922) 84.4, (1923) 84.9, 87, 87.1, (1924) 84.5, 88, (1925) 84, 85, 87	82,
University of Western Ontario Faculty of Medicine	(1924) (1926) 86	85.1,
Western University Faculty of Medicine	(1910)	84
McGill University Faculty of Medicine	(1918) (1922) 83, (1924) 82.5, (1925) 80.7	85,
Catholic University, Louvain, Belgium	(1890)†	79
University of Budapest, Hungary	(1923)†	83
Undergraduate		85

FAILED	Year Grad.	Per Cent
University of Palermo, Italy	(1904)† 70.2, (1919)†	73

* These candidates have finished their medical courses and will receive their M.D. degrees on completion of a year's internship in a hospital.

† Verification of graduation in process.

North Carolina June Examination

Dr. Kemp P. B. Bonner, former secretary of the Board of Medical Examiners of North Carolina, reports the oral and written examination held at Raleigh, June 21-25, 1926. The examination covered 16 subjects and included 70 questions. An average of 80 per cent was required to pass. Ninety-three candidates were examined, all of whom passed. Nineteen candidates were licensed by reciprocity. The following colleges were represented:

PASSED	Year Grad.	Per Cent
George Washington University Medical School	(1924) (1925) 91.7, (1926) 85.8, 90.1, 90.6	91.1,
Howard University School of Medicine	(1923) 84.1, (1926)	86.4
Emory University School of Medicine	(1925) 88.6, (1926) 88.7, 90.3, 91	85.7, 88,
Tulane University of Louisiana School of Medicine	(1926) 87, 87.6, 88.7, 88.8, 89.6	83, 85.8,
Johns Hopkins University Medical Department	(1923)	84
University of Maryland School of Medicine	(1926) 86.7, 87.1, 88.1, 88.7	84.6,
Harvard University	(1916) 85.4, (1924)	91
University of Michigan Medical School	(1922)	90
Washington University School of Medicine	(1926)	92.7
Columbia University College of Phys. and Surgs.	(1926)	88.7
Cornell University Medical College	(1926)	92.1
Syracuse University College of Medicine	(1923)	82.4
University of Cincinnati College of Medicine	(1923) (1924) 90, (1925) 89.6, (1926) 88.3, 89.8, 91.6	91.6,
Jefferson Medical College of Philadelphia	(1926) 87.3, 88.6, 88.7, 88.8, 89.1, 89.8, 91.6, 95.4	86,
University of Pennsylvania School of Medicine	(1923) (1925) 91.1, (1926) 84.7, 86.7, 86.8, 88.7, 89.3, 89.3, 90, 90.1, 91.1, 91.8, 92.4, 95	89.7, 93.7,
University of Pittsburgh School of Medicine	(1925)	90.4
Woman's Med. College of Pennsylvania	(1924) 90.6, (1925)	89.3
Medical College of the State of South Carolina	(1926)	89.1, 89.6

Meharry Medical College.....(1924) 86.1, (1926) 80.1, 80.1
University of Tennessee College of Medicine..(1926) 82, 83.7, 84.3, 84.3
Vanderbilt University School of Medicine.....(1925) 89.7
Medical College of Virginia..(1925) 84.7, 87.6, 89.4, 95, (1926) 86, 86.4, 87.3, 88.3, 88.4, 88.6, 88.6, 88.8, 90.8, 91.4, 92.8
University of Virginia Department of Medicine.....(1926) 90.3, 92.3

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Alabama School of Medicine		(1917), (1920)	Alabama
Yale University School of Medicine		(1901)	New York
Atlanta Medical College		(1905)	Texas
Northwestern University Medical School		(1890)	Illinois
University of Toronto Faculty of Medicine		(1904)	Connecticut
University of Pennsylvania School of Medicine		(1907)	Penna.
University of Louisville School of Medicine		(1916)	W. Virginia
Johns Hopkins University Medical Department (1921)		(1907)	Dis. Colum. Maryland
University of Maryland School of Medicine		(1916)	Maryland
Harvard University		(1921)	New York
Kansas City Medical College		(1893)	Kansas
John A. Creighton Medical College		(1903)	Nebraska
Columbia University College of Phys. and Surgs.		(1894)	New Jersey
University of Buffalo Department of Medicine		(1907)	New York
Medical College of the State of South Carolina		(1899)	S. Carolina
Baylor University College of Medicine		(1921)	Texas
University of Virginia Department of Medicine		(1919)	Virginia

Tennessee June Examination

Dr. A. B. De Loach, secretary of the Tennessee Board of Medical Examiners, reports the written examination held at Memphis, Nashville and Knoxville, June 11-12, 1926. The examination covered 8 subjects and included 64 questions. One hundred and thirty-six candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
College of Medical Evangelists		(1926)	82.8
Loyola University School of Medicine		(1926)	88.9
Northwestern University Medical School		(1926)	86.1
Tulane University of Louisiana School of Medicine (1926) 83.5, 87.8		(1925)	85.4,
Johns Hopkins University Medical Dept.		(1919) 83.4, (1922)	84.3
Harvard University		(1919) 87.5, (1925)	87
St. Louis College of Phys. and Surgs.		(1909) 81.1, (1922)	85
Washington University School of Medicine		(1925)	86.5
Jefferson Medical College of Philadelphia		(1926)	89.1
Meharry Medical College.		(1905) 81.6, (1914) 79.8, (1924)	88.4,
(1925) 85.4, (1926) 81.4, 81.6, 82, 82.4, 82.4, 82.5, 82.6, 82.8, 82.8, 83.4, 83.5, 83.8, 83.9, 83.9, 84, 84.1, 84.3, 84.4, 85, 85.3, 85.4, 85.4, 85.8, 85.8, 86.3, 86.8, 87.3, 87.4, 87.9, 88.3, 89, 89.8			
University of Tennessee College of Med.		(1925) 86.8, (1926) 80.1, 82.6,	
83.9, 84, 84.5, 85.4, 85.6, 86.3, 86.5, 86.5, 86.8, 87, 87.1, 87.3, 87.3, 87.4, 87.4, 87.5, 87.6, 87.6, 87.8, 87.8, 87.9, 87.9, 87.9, 87.9, 88.6, 88.9, 89, 89.1, 89.1, 89.3, 89.4, 89.4, 89.6, 90.3, 90.9, 91			
Vanderbilt University School of Medicine		(1926) 80.1, 82.1,	
82.5, 83.1, 83.3, 83.6, 84.1, 84.5, 84.9, 84.9, 85, 85, 85.3, 85.4, 85.5, 85.8, 85.9, 86, 86.1, 86.3, 86.3, 86.4, 86.5, 86.6, 86.6, 86.8, 86.8, 87.3, 87.3, 87.4, 87.9, 87.9, 88.4, 88.5, 88.6, 89, 89.3, 89.4, 90.1, 90.4, 90.4, 90.5, 90.8, 90.9, 91.5, 91.8, 91.9			

Ohio June Examination

Dr. H. M. Platter, secretary of the Ohio State Medical Board, reports the oral, written and practical examination held at Columbus, June 8-12, 1926. The examination covered 10 subjects and included 80 questions. An average of 75 per cent was required to pass. Of the 227 candidates examined, 224 passed and 3 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
College of Medical Evangelists		(1919)	82
Yale University School of Medicine		(1925)	81.8
George Washington University Medical School		(1924)	78.8
Loyola University School of Medicine		(1926) 76.6,	79.8
Northwestern University Medical School		(1926) 82.2,	82.9
Indiana University School of Medicine		(1925) 82.3, (1926)	80.4
Harvard University.		(1915) 79.8, (1921) 77, (1922) 90, (1925)	84.2
St. Louis University School of Medicine		(1925) 81.2,	83.8,
(1926) 79.2, 79.5, 81.1, 82.9, 83.6, 84.2			
Eclectic Medical College, Cincinnati		(1926) 75.4, 75.7,	76, 76.1,
76.7, 77.5, 77.7, 78, 78.4, 79.3, 79.9, 80.3, 80.7, 81.5, 81.8, 82.3, 83.6, 84.1, 84.5, 84.7, 84.8, 85.4			
Ohio State University College of Medicine.		(1926) 75.9, 76.5, 77.7,	78.3,
78.6, 78.9, 79.2, 79.6, 79.8, 80.1, 80.1, 80.3, 80.5, 80.5, 80.6, 80.6, 80.8, 80.9, 81.2, 81.2, 81.3, 81.6, 81.7, 81.7, 81.8, 81.8, 82, 82, 82.1, 82.1, 82.1, 82.1, 82.1, 82.2, 82.2, 82.3, 82.8, 82.9, 83.1, 83.1, 83.2, 83.2, 83.5, 83.6, 83.6, 83.7, 83.8, 83.9, 83.9, 84.2, 84.3, 84.3, 84.5, 84.6, 84.6, 84.6, 85, 85.1, 85.9, 86, 86, 86.3, 86.5, 86.6, 86.8, 88.6, 89.1			
University of Cincinnati College of Medicine		(1926)	76.5,
76.7, 77.9, 78.7, 78.8, 79.2, 79.3, 79.5, 80.4, 80.6, 80.6, 80.6, 80.9, 81.4, 81.5, 81.6, 81.6, 81.8, 82, 82.1, 82.2, 82.2, 82.4, 82.4, 82.5, 82.7, 82.8, 82.9, 83.1, 83.1, 83.2, 83.2, 83.3, 83.3, 83.6, 83.8, 84.2, 84.2, 84.5, 85.4, 85.9, 86.1, 86.2, 86.7, 87.1,			
Western Reserve Univ. School of Med.		(1924) 83.3, (1926)	76.8,
77.3, 77.5, 77.6, 78.4, 78.9, 79.3, 80.2, 81.3, 81.8, 81.9, 81.9, 81.9, 82, 82.2, 82.5, 82.6, 82.7, 82.8, 82.9, 83.1, 83.4, 83.7, 83.7, 83.9, 84.2, 84.3, 84.4, 84.6, 84.6, 84.7, 84.7, 84.8, 85.1, 85.2, 85.3, 85.3, 85.4, 85.8, 85.8, 85.9, 86, 87.2, 87.2, 87.9,			
Jefferson Medical College of Philadelphia		(1926) 78.2, 79.3,	86.8
University of Pennsylvania School of Medicine		(1925) 82.3,	82.9
University of Pittsburgh Sch. of Med.		(1925) 81.4, 86.4, (1926)	78.4
Marquette University School of Medicine		(1926)	79.6
Dalhousie University Faculty of Medicine		(1926)	77.4
Queen's University Faculty of Medicine		(1920)	75
University of Toronto Faculty of Medicine.		(1920) 84, (1923)	79,
(1924) 86.1, 86.2, (1925) 76.8, 80.4, 82.8			
University of Western Ontario Med. Sch.		(1923) 82.6, (1925)	*
McGill University Faculty of Medicine		(1923)	76.4
University of Cologne, Germany		(1924)†	79.8
University of Glasgow, Scotland		(1923)	78.5

College	FAILED	Year Grad.	Per Cent
Meharry Medical College		(1924)	72.8
University of Munich, Germany		(1921)	72.3
University of Naples, Italy		(1923)†	65.6

* No grade given.
† Verification of graduation in process.

Book Notices

PERNICIOUS ANEMIA. By Frank A. Evans, M.D. Cloth. Price, $2.50. Pp. 178. Baltimore: Williams & Wilkins Company, 1926.

This summarizes the important literature on pernicious anemia up to the beginning of 1926. A statement of the theories that have been held as to etiology is given, but no constructive opinion or theory is advanced. Only scant reference is made to the theory of pernicious anemia as a protein deficiency disease, or as a manifestation of vitamin deficiency. The appearance of the papers of Minot and Murphy, and of Koessler, Maurer and Loughlin, since the publication of this book, has greatly stimulated clinical investigation and seems to have opened up a new and hopeful avenue of approach in our understanding and treatment of pernicious anemia. It is unfortunate that this book, which reflects the hopeless outlook of the past concerning pernicious anemia, should have appeared before the final results of treatment by dietary measures are known. The author discusses in considerable detail the relation of achlorhydria to pernicious anemia and the identity of subacute combined sclerosis of the spinal cord with pernicious anemia, both subjects of great interest. A summary of clinical observations, the diagnosis and the time-honored methods of treatment, including transfusion and splenectomy, is given. That the intensive investigation of the last few months and the hopefulness offered by the new lines of approach could not be included in the otherwise excellent portrayal of knowledge concerning pernicious anemia up to the present year is a disappointment. It is to be hoped that a succeeding volume will incorporate the results of present studies.

HANDBUCH DER NORMALEN UND PATHOLOGISCHEN PHYSIOLOGIE. Mit Berücksichtigung der experimentellen Pharmakologie. Herausgegeben von A. Bethe, G. v. Bergmann, G. Embden und A. Ellinger. Elfter Band. Receptionsorgane I. (E/III. Tangoreceptoren. Thermoreceptoren. Chemoreceptoren. Phonoreceptoren. Statoreceptoren). Paper. Price, 81 marks. Pp. 1062, with 236 illustrations. Berlin: Julius Springer, 1926.

This is the fourth of the seventeen volumes of this comprehensive handbook of normal and pathologic physiology that has appeared. It deals with tangoreceptors, thermoreceptors, chemoreceptors, phonoreceptors and statoreceptors. In the review of volume II, dealing with respiration (March 13, p. 803) a general prospectus of the entire series was given with respect to the organization of the combined series by collaborative investigators who have pooled their forces to consummate this enormous and useful task. The present is a large volume dealing with diverse and intricate physiologic problems. Thirty-two international authorities have made it what it is. Von Frey discusses the tangoreceptors of man; temperature sense and pain are discussed by Goldscheider; von Skramlik, who recently issued a volume on smell and taste (reviewed, October 30), wrote the section dealing with taste; Magnus and De Kleyn are authors of the section dealing with the function of the semicircular canals and otoliths in mammals. These are mentioned solely to indicate to the reader the solid and authoritative character of the large

volume. As the general title implies, almost every physiologic section ends with a separate chapter on the pathologic physiology of the organ or organs in question and its pharmacology (e. g., pharmacology and toxicology of the ear, labyrinthine neuroses, psychogenic disturbance of hearing). When the remaining volumes have been issued, a monumental work of compilation and critical evaluation of physiologic data will have been completed. But the price of the whole set or individual volumes is so high that even the custodian of the funds of American libraries will balk at the expense. The set will be a wonderful working tool but, we are afraid, quite beyond the financial reach of those who need to use it most.

AN ATLAS OF MIDWIFERY. By Comyns Berkeley, M.A., M.C., M.D., Senior Obstetric and Gynæcological Surgeon, the Middlesex Hospital, and Georges M. Dupuy, M.D. Cloth. Price, $3. Pp. 160, with 256 illustrations. New York: William Wood & Company, 1926.

In a small, handy volume the authors have concentrated a collection of drawings illustrating those portions of obstetrics which can thus be illustrated. Simple but ample descriptive legends accompany the illustrations. The first section deals with anatomy and physiology, the second with pregnancy, and the third and largest section with labor. This includes the various presentations and positions of the fetus. The fourth section is descriptive of the new-born child, chiefly devoted to methods of resuscitation. This might have been enhanced by the omission of Schultze's method of "swinging" the child, a method now condemned by most authorities. At the end of the book a few well selected roentgenograms in pregnancy are splendidly reproduced. Below the one depicting twins they state that "such a skiagram is of diagnostic value in case of excessive abdominal enlargement in connection with pregnancy and its possible association with tumor." The roentgenogram clearly depicting triplets is especially noteworthy. The atlas can be recommended to students of obstetrics as a distinct aid in addition to but not to replace their textbooks. The English method of designating all measurements in inches which the authors follow may prove a minor objection to those accustomed to the centimeter scale.

DIE CHIRURGIE. Eine zusammenfassende Darstellung der allgemeinen und der speziellen Chirurgie. Herausgegeben von Prof. Dr. M. Kirschner und Prof. Dr. O. Nordmann. Lieferung 10. Band V. Die Chirurgie des Magens und Zwölffingerdarms. Von Prof. D. N. Guleke, Prof. Dr. H. Nieden, und Prof. Dr. H. Smidt. Paper. Price, 21 marks. Pp. 361-680, with 101 illustrations. Berlin: Urban & Schwarzenberg, 1926.

The tenth section of this work is a monograph from the Jena clinic on the surgery of the stomach and doudenum. The authors have covered the subject with great thoroughness. The history, literature, symptomatology, pathology and treatment are taken up as in the other sections, with great regard for accuracy and detail. The text is very readable, and the discussions are extremely interesting. The subject is treated in a critical rather than dogmatic manner. For this reason the monograph will appeal strongly to the surgeon, while the medical student will be disappointed in the rather brief descriptions of technic, and the general practitioner in the difficulty of picking out those facts which he considers important.

EPILEPSY: A Functional Mental Illness, Its Treatment. By R. G. Rows, M.D., Pathologist and Medical Officer, County Mental Hospital, Prestwich, Manchester, and W. E. Bond, M.R.C.S., L.R.C.P., a Senior Medical Officer to the Ministry of Pensions. Cloth. Price, $3. Pp. 138. New York: Paul B. Hoeber, Inc., 1926.

The authors discuss epilepsy in patients with seizures first appearing during or after the war. They review a small part of the experimental and pathologic literature and show that an organic causation of epilepsy is not at all proved. By means of psychologic studies of hospitalized soldiers the psychogenic factor of epilepsy is discussed. This is all too superficial, and conclusions are drawn from inadequate psychiatric investigations. Fright, physical trauma, the memory of bloody scenes, are disclosed in "flashes of memory" to the patient, and apparently the adequate conscious realization of these scenes again was sufficient in many cases to cure the epilepsy. The authors advocate, therefore, as treatment "explanation, exploration and reeducation," with the help of a simple outdoor life and no drugs. This book is of little value in our progress toward a better understanding of the epilepsies.

LA SÉCRÉTION INTERNE DU PANCRÉAS ET L'INSULINE. Par André Choay, docteur en médecine, pharmacien, medaille d'or de l'internat des hôpitaux de Paris. Paper. Price, $2. Pp. 570, with 7 illustrations. Paris: Masson & Cie, 1926.

This is a scholarly monograph, particularly in the historical aspect of diabetes and insulin. The author displays a comprehensive knowledge, both in the experimental and in the clinical field, combined with fairness and commendable critical judgment and soundness in all his conclusions. This is revealed in all of the chapters of the monograph, and particularly in the concluding chapter, which deals with the question of interrelation between the pancreatic hormone and the hormones from other ductless glands, in which field there exists at present, both in experimental and clinical literature, so much baseless conjecture. The volume is a real contribution to medicine and biology, and may be read with great profit by all physicians familiar with the French language.

SURGICAL ANATOMY OF THE HUMAN BODY. Vol. 1—Scalp, Cranium, Brain, Face, Mouth, Throat, Organs of Special Senses. By John B. Deaver, M.D., Sc.D., LL.D., Surgeon-in-Chief to the Lankenau Hospital, Philadelphia. Second edition. Leather. Price, $12. Pp. 551, with illustrations. Philadelphia: P. Blakiston's Son & Co., 1926.

The development of the art and science of surgery may be traced from its early days in the dissecting room to its present background in the laboratory of physiology. The older generation of present-day surgeons spent their early years as demonstrators of anatomy, which was then considered the most important of the so-called surgical sciences. In opposition to the anatomic school of surgeons there has now developed a new school whose method of attack has caused the pendulum of thought to swing to the more detailed study of function and its perversions. Moreover, there can be little doubt that anatomy now has a far less important rôle in the surgical curriculum than it had twenty years ago, when the surgeon paid little attention to physiology. But we must not forget that knowledge of anatomy forms the structural basis for operative surgery, which in the last analysis is the consummation of all the ideas we may possess on any surgical subject. Anatomy, properly taught and presented, should be a surgical subject, not a dead language to be studied in a monotonous way like Latin for mere mental calisthenics. In this volume Deaver gives us a masterly presentation of the most difficult region of the body, the scalp, cranium, brain, face, mouth, throat and organs of special sense. The relationships between anatomic details and disease and injury, particularly from the standpoint of diagnosis and the line of operative attack, are constantly correlated. The book can with equal facility be used as a guide in the dissecting room and as a manual of operative surgery. Minuteness of detail and a clear, concise style characterize the text. The illustrations are not excelled elsewhere; they are wash drawings possessing the perspective of a photograph and the fine detail of an engraving.

DIE SPRACHLAUTE: Experimentell-phonetische Untersuchungen nebst einem Anhang über Instrumentalklänge. Von Carl Stumpf, Dr. Phil., Dr. Med., o. Professor an der Universität zu Berlin. Paper. Price, 28,50 marks. Pp. 419, with 16 illustrations. Berlin: Julius Springer, 1926.

In the preface, Stumpf states that he began the experiments which led to this work in 1913. Exciting as were the events outside Germany during the World War, it was correspondingly quiet in the scientific institutions of Berlin. Hence the investigations along the line of acoustics could be carried out to the fullest extent. Although he was not at one time entirely certain regarding the accuracy of the Helmholz theory of vowels, he has come to the conclusion that in the main it is absolutely correct. Beginning with analysis of the singing vowels by means of the resonance of tuning forks, the author takes up the analysis by means of interference tubes, the structure of the whispered vowels and consonants, and the subjective pitches of the mute sounds. The synthetic production of vowels and their phonographic, telephonic and otologic characteristics are discussed. There are chapters on the con-

sideration of the sounds from the acoustic standpoint and others on subjects such as the psychophysics of speech. The monograph is of a rather technical character which will appeal mostly to men interested in the study of the development of phonetics. The work is authoritative and comes from the pen of one of the greatest investigators and research workers in this field of endeavor. The book itself is systematically arranged, well printed and supplied with a considerable number of tables. As a reference work it will prove most valuable to the student of phonetics.

MANUAL OF EMERGENCIES: MEDICAL, SURGICAL AND OBSTETRIC. Their Pathology, Diagnosis and Treatment (Based upon Lenzmann's "Emergencies in Medical Practice"). By J. Snowman, M.D., M.R.C.P. Second edition. Cloth. Price, $4. Pp. 361. New York: William Wood & Co., 1926.

Although apparently a small pocket manual, this book contains much interesting and valuable material. Its chapters include hemorrhage, respiratory obstruction, shock, convulsions, poisoning, and the emergencies of obstetrics and of cardiovascular, gastro-intestinal and urinary diseases. It contains many points of information not commonly known, and most accessibly placed because of the brevity of the work.

UEBER DEN STOFFWECHSEL DER TUMOREN: Arbeiten aus dem Kaiser Wilhelm-Institut für Biologie, Berlin-Dahlem. Herausgegeben von Otto Warburg. Paper. Price, 16,50 marks. Pp. 263, with 42 illustrations. Berlin: Julius Springer, 1926.

This is a collection of the papers of Warburg and his co-workers on metabolism of cancer tissue, which show that cancer cells have a remarkably high capacity to split sugar into lactic acid.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

A PRACTICAL MEDICAL DICTIONARY OF WORDS USED IN MEDICINE: With Their Derivation and Pronunciation, Including Dental, Veterinary, Chemical, Botanical, Electrical, Life Insurance and Other Special Terms; Anatomical Tables of the Titles in General Use, and Those Sanctioned by the Basle Anatomical Convention; Pharmaceutical Preparations, Official in the U. S. and British Pharmacopœias and Contained in the National Formulary, and Comprehensive Lists of Synonyms. By Thomas Lathrop Stedman, A.M., M.D., Editor of the "Twentieth Century Practice of Medicine." Ninth edition. Leather. Price, $7.50. Pp. 1178, with illustrations. New York: William Wood & Company, 1926.

New edition with new words and changes established by new pharmacopeia.

THE LYMPHOCYTE IN RESISTANCE TO TISSUE GRAFTING, MALIGNANT DISEASE AND TUBERCULOUS INFECTION: An Experimental Study. By James B. Murphy, M.D. Monographs of the Rockefeller Institute for Medical Research, No. 21. Paper. Price, $2. Pp. 168, with illustrations. New York: Rockefeller Institute for Medical Research, 1926.

Evidence that lymphoid tissue is concerned in establishing resistance to cancer.

FRESHMAN HYGIENE: Personal and Social Problems of the College Student. By Raymond C. Bull, A.B., M.D., Director of Student Health Service, Lehigh University, and Stanley Thomas, M.S., M.A., Associate Professor of Bacteriology, Lehigh University. Cloth. Price, $2. Pp. 288, with 74 illustrations. Philadelphia: J. B. Lippincott Company, 1926.

Outline of personal and social hygiene of interest to both student and teacher.

DELINQUENTS AND CRIMINALS: Their Making and Unmaking. Studies in Two American Cities. By William Healy, M.D., and Augusta F. Bronner, Ph.D., Directors, Judge Baker Foundation, Boston. (Judge Baker Foundation Publication No. 3.) Cloth. Price, $3.50. Pp. 317. New York: Macmillan Company, 1926.

Shows that crime begins in youthful tendencies and defines a program for control.

TRANSACTIONS OF THE FIFTH ANNUAL CONFERENCE OF STATE SANITARY ENGINEERS. Public Health Bulletin, No. 154. Paper. Price, 20 cents. Pp. 160. Washington: Government Printing Office, 1925.

ABILITY, A PSYCHOLOGICAL STUDY. By Victoria Hazlitt, M.A., Lecturer in Psychology, Bedford College, University of London. Cloth. Price, $1.80. Pp. 147, with 9 illustrations. New York: Macmillan Company, 1926.

Considerations governing mental capacity with a collection of mental tests.

WHAT'S BEST TO EAT? By S. Henning Belfrage, M.D., M.R.C.S., L.R.C.P. With a Practical Supplement by Lucy H. Yates, M.C.A. Cloth. Price, $3. Pp. 199, with illustrations. New York: William Wood & Company, 1926.

British résumé of our knowledge of dietetics, with a collection of recipes.

HANDATLAS DER CYSTOSKOPIE. Von Dr. Med. Otto Kneise, Ausserordentl. Professor der Urologie an der Universität Halle-Wittenberg. Second edition. Cloth. Price, 42 marks. Pp. 119, with plates and illustrations. Leipsic: Georg Thieme, 1926.

Handsomely illustrated atlas of cystoscopy beautifully prepared.

RITUAL AND BELIEF IN MOROCCO. Volume 1. By Edward Westermarck, Ph.D., Hon. LL.D., Martin White Professor of Sociology in the University of London. Cloth. Price, $15 for the two volume set. Pp. 608, with illustrations. New York: Macmillan Company, 1926.

Ethnologic study of custom and spiritual belief in Morocco.

DIE PHYSIKALISCHE THERAPIE DES PRAKTISCHEN ARZTES. Herleitung allgemein gültiger Behandlungsregeln. Von Dr. Georg Hauffe. Paper. Price, 3 marks. Pp. 140, with 14 illustrations. Berlin: Urban & Schwarzenberg, 1926.

Brief German outline of physical therapeutic methods.

PRINCIPLES OF MEDICAL TREATMENT. By George Cheever Shattuck, M.D., A.M., Assistant Professor of Tropical Medicine, Harvard Medical School. Sixth edition. Cloth. Price, $3.50. Pp. 256. Cambridge: Harvard University Press, 1926.

Popular handbook of therapy by several authors.

LEHRBUCH DER SYSTEMATISCHEN ANATOMIE. 3 Band.—Das Gefäss-System. Von Professor Dr. Julius Tandler, Vorstand der I. anatomischen Lehrkanzel, Wien. Paper. Price, 24 marks. Pp. 381, with 186 illustrations. Leipsic: F. C. W. Vogel, 1926.

Section on circulatory system from new anatomy.

LE PORPORE EMORRAGICHE. Por G. di Guglielmo, Professore incaricato di Semeiotica e Diagnostica Medica nella R. Universita di Pavia. Paper. Pp. 149. Pavia, 1926.

Italian monograph with bibliography and tabulated differential diagnosis.

THE SURGEON'S LOG. Impressions of the Far East. By J. Johnston Abraham. Seventh edition. Cloth. Price, $5. Pp. 361, with illustrations. New York: E. P. Dutton & Company, 1926.

Well written travel story of the Far East as a physician saw it.

FUNDAMENTALS OF DIETETICS. A Text-Book for Nurses and Dietitians. By Bertha M. Wood and Annie L. Weeks. Cloth. Price, $1.75 net. Pp. 241, with illustrations. Philadelphia: W. B. Saunders Company, 1926.

Well delimited outline of information for practical nursing.

THE HUMAN BODY. By Marie Carmichael Stopes, Doctor of Science, London. Cloth. Price, $2.50. Pp. 268, with 53 illustrations. New York: G. P. Putnam's Sons, 1926.

An unexceptional account of the human mechanism.

SYPHILIS DU TESTICULE. Par Jean-Étienne Marcel. Paper. Pp. 234, with illustrations. Paris: E. Le François, 1926.

Monograph based on case study with complete bibliography.

LANTERN SLIDES AND LECTURE MATERIAL ON EYESIGHT CONSERVATION. Eye Sight Conservation, Bulletin 5. Issued by the Eye Sight Conservation Council of America. Price, 40 cents. Pp. 95, with illustrations. New York: Eye Sight Conservation Council of America, 1924.

COLECCIÓN DE ARTÍCULOS DONDE SE DEMUESTRA TEÓRICA Y PRÁCTICAMENTE LA CURACIÓN DE LA TUBERCULOSIS E INFECCIONES EN GENERAL. Por M. Lloria Pérez, Médico. Paper. Pp. 121, with illustrations. Valéncia: José Pascual, 1926.

TRANSACTIONS OF THE SOUTHERN SURGICAL ASSOCIATION. Volume XXXVIII. Thirty-Eighth Session held at Louisville, Ky., December, 1925. Edited by Robert L. Payne, M.D. Cloth. Pp. 502, with illustrations. Philadelphia, 1926.

A REPORT ON THE LATE RESULTS OF OPERATION FOR CANCER OF THE BREAST (Leeds). No. 34—Reports on Public Health and Medical Subjects. Paper. Price, 6d. net. Pp. 20. London: His Majesty's Stationery Office, 1926.

Medicolegal

Valid Proceeding Against Unlicensed Practitioner

(Belding v. State ex rel. Davis (Ala.), 107 So. R. 853)

The Supreme Court of Alabama says that the proceeding in this case, which was by an information in the nature of quo warranto, filed by the solicitor of the tenth judicial circuit, showing that respondent Belding was practicing the profession of medicine by treating the diseases of human beings without having obtained a certificate of qualification from the state board of medical examiners, or the license required by law, was authorized by subdivision 1 of section 9932 of the code of 1923. The fact that the act of 1919 created the Bessemer division of the tenth judicial circuit did not affect the general jurisdiction of subject matter vested in the Birmingham judges of the circuit, but operated only on the venue of actions within the circuit. Hence the fact that the respondent's unlawful practice of medicine was in territory west of Bessemer, and therefore territorially within the jurisdiction of the Bessemer division, and without the jurisdiction of the Birmingham division, presented a question of venue merely, and, no plea to the venue having been interposed by the respondent, he effectually waived his rights in the premises, and that objection was not available to him on appeal.

A demurrer to the petition was properly overruled. It was not necessary to charge that the respondent was practicing medicine and treating human diseases according to any system. Nor was it necessary to describe in detail the particular acts and treatments complained of, which were of course matters of evidence and not of pleading. The petition was in all respects sufficient. The undisputed evidence clearly established the allegations of the petition, and the trial judge properly instructed the jury to find for the state, and properly entered a decree on the verdict prohibiting the respondent from practicing medicine. It was complained that the form of the decree, as worded, would prevent the respondent from ever in future practicing medicine, even though he should hereafter become qualified by certificate or license. The decree would, however, be construed as it applied to the facts before the court, and was not intended, and would not be permitted, to exclude the respondent from the practice of medicine when he might become legally qualified to do so.

Inoculation with Syphilis—Physician as Witness

(Howe v. State (Okla.), 244 Pac. R. 826)

The Crminal Court of Appeals of Oklahoma says that defendant Howe was convicted of inoculating another with a venereal disease, and sentenced to serve a term of three years in the state penitentiary. The prosecution was under the statute which provides that any person who shall inoculate himself or any other person or shall suffer himself to be inoculated with smallpox, syphilis or gonorrhea, and shall spread or cause to be spread to any other persons with intent to or recklessly be responsible for the spread of or prevalence of such infectious disease, shall be deemed a felon. The information charged that on or about a certain date in a named county in the state the defendant did unlawfully and feloniously inoculate and infect another person, his wife, with a contagious and infectious disease commonly known as syphilis, with the unlawful and felonious intent on his part to spread such infectious disease recklessly. It was contended that the information was insufficient in failing to allege that the defendant "knowingly" inoculated another with a contagious disease as prohibited by the statute, but the court holds that the information contained all the allegations of scienter or knowledge that the statute requires, and was sufficient. One who did not know himself to have a disease could not, under this statute, intentionally communicate the disease to another, nor if without knowledge that he was inoculated could he recklessly be responsible for communicating it to another. Proof of knowledge may be shown by either direct and positive testimony or by circumstances. A person knowing himself to be inoculated with any of the diseases named in this statute who shall intentionally or recklessly be responsible for communicating such disease to another is guilty of a felony.

In the evidence of the state in chief, a physician was called as a witness and testified as to the condition of the defendant's wife; and testimony was further drawn from him to the effect that he had also treated the defendant, and the statements made to him by the defendant, and, over the objection of the defendant, there was permitted testimony of statements made by the defendant and of knowledge obtained by examination after he had been employed by the defendant as his physician. At that time the defendant had not testified, and the privilege had not been waived as might be done under the latter part of the Oklahoma statute which provides that a physician or surgeon is incompetent to testify concerning any communication made to him by his patient with reference to any physical or supposed physical disease, or any knowledge obtained by a physical examination of any such patient, but the privilege is waived if the person offers himself as a witness on the same subject. Admitting the testimony in question was a violation of the statutory rights of the defendant; and the case is reversed and remanded.

Test and Caution When Insanity Is Defense to Crime

(People v. Sloper (Calif.), 244 Pac. R. 362)

The Supreme Court of California, in affirming a judgment of conviction of murder of the first degree, says that the defendant denounced as being an "antiquated and unscientific" test what is known as the "right and wrong" test, which was very early adopted as the rule of California, and is the rule of most of the American courts. It was his contention that the question of insanity is "a question of fact for the jury and not a question of law for the court." Whether the accused was, at the time he committed the act for which he was on trial, legally responsible therefor, as responsibility is defined by the law, was a question of fact entirely within the province of the jury. The mental test is merely a standard by which responsibility is to be measured. It would tend to weaken the safeguards that protect the lives and property of the citizen from the assaults of the vicious and lawless and to aid disorder if it should be established as the law that any mental disorder or disease, however slight, and whether such malady had any perceptible bearing or influence on the mind of the person moved to commit murder, would afford immunity to crime. The wisdom of the rule that prevails in California, and, so far as this court is advised, in most if not all civilized nations, has the approval of the highest judicial tribunals known to the Anglo-Saxon race, and no reason, resting on experience or known to legal or medical science, was pointed to which would justify the abolition of a test founded on necessity and approved by experience, and which prescribes, with reasonable regard for the frailties and weaknesses of mankind, the degree, kind and quality of mental incompetence or derangement that must be shown to exist to relieve a person of the consequences of his act which otherwise would be punished as a crime.

To summarize the defendant's attacks on what was done in giving instructions to the jury, they consisted of objections made to the soundness of the "right and wrong" test mentioned above, and to the following propositions: The refusal of the law to recognize as a defense the "irresistible, uncontrollable impulse" and moral insanity doctrines; an instruction which admonished the jury to examine the defense of insanity with care lest an ingenious counterfeit of that malady should furnish immunity to guilt; the burden of proving the existence of insanity by a preponderance of evidence resting on the defendant. It is not necessary to cite authorities to support these firmly established principles of law. The most serious objection was the one directed against the simulation of insanity as a defense.

While it is true that the propriety of cautioning the jury against ingenious counterfeits of mental maladies finds support in the earlier decisions of this court, the propriety of giving such an instruction has been questioned by its more recent decisions, coupled with a recommendation that it would be better not to give it lest the jury should conceive the notion that the court looked on the defense with disfavor. A jury, doubtless, would, without being so advised by the court,

examine with care the defense of insanity in cases in which the proof of the overt act is so full as to cut off all other means of avoiding conviction, and it is therefore unnecessary to quicken its sense of caution by an admonition on the part of the court.

More Pay for Partial than for Total Loss of Sight

(Snopkoski v. Home Riverside Coal Mines Co. (Kan.), 244 Pac. R. 849)

The Supreme Court of Kansas, in affirming a judgment in favor of the plaintiff for $2,376.38 as compensation under the workmen's compensation law of that state for the accidental, permanent, partial, though almost complete, loss of the sight of his right eye, holds that under that law more may be recovered for the permanent partial loss of the sight of an eye than for the total loss of the eye. Furthermore, under the workmen's compensation law, a petition to recover compensation for the total loss of sight of an eye will be considered as amended to correspond with the evidence so as to enable the plaintiff to recover for the permanent partial loss of the sight of the eye, as in this instance, in which there was evidence which tended to prove that the sight of the eye was not totally destroyed.

What Is Exacted of Physician or Surgeon—Malpractice

(Owens v. McCleary (Mo.), 281 S. W. R. 682)

The Supreme Court of Missouri, division 1, says that the law exacts of a physician or surgeon who undertakes to treat a patient that he (1) possess that degree of skill and learning which is ordinarily possessed and exercised by the members of his profession in good standing, practicing in similar localities; (2) use reasonable care and diligence in the exercise of his skill and the application of his learning, and (3) act according to his best judgment. Conversely, he is liable for an injury to his patient resulting from want of the requisite knowledge and skill, or the omission to exercise reasonable care, or the failure to use his best judgment. Conformity with the established mode of treatment is the test ordinarily applied in determining whether a physician or surgeon, in a given case, has brought to the treatment of his patient the requisite knowledge and skill. A failure to employ the methods followed or approved by his school of practice evidences either ignorance or experimentation on his part. The law tolerates neither. If he wishes to avoid civil liability, he must employ in the treatment of his patients methods which are recognized and approved by his profession as most likely to produce favorable results. Such seems to be the established rule.

In the case at bar there was evidence tending to show that the defendant treated the plaintiff for hemorrhoids, and that in doing so he did not use any of the methods of treatment approved by his profession, but, on the contrary, employed one distinctly disapproved by the profession, thereby inflicting on the plaintiff serious injury. If the failure to follow approved methods was not enough of itself to fix liability, it at least afforded a sufficient basis for the jury to find that the requisite knowledge, skill or care was lacking. There was also evidence that the defendant neglected to dress or drain the incisions made in opening abscesses. The trial court correctly held that there was evidence to take the case to the jury.

An instruction directed the jury to determine whether "in making said treatment the defendant carelessly and negligently injured the plaintiff," without giving them any guidance as to the specific acts or omissions, which, under the law, would constitute negligence. It permitted them to base a finding for the plaintiff on any theory of negligence which they could construct or evolve out of their own minds, and was therefore erroneous. Under the evidence liability could be predicated on just two things: the mode of treatment employed, and the failure to keep drained the openings made in lancing the abscesses. The instruction should have framed specific issues with reference to these. On the state of the evidence shown by the record, the jury should have been told that, if it found that the defendant treated the plaintiff for hemorrhoids, that in doing so he employed a method that was neither followed nor approved by the medical profession, and that as the direct result of the use of such unapproved method, and in consequence thereof, the plaintiff sustained injury, it should return a verdict for the plaintiff.

The evidence did not disclose how the plaintiff was affected, if at all, by the defendant's failure to take any measures for the continued draining of the abscesses after he had opened them. It was conceivable that such neglect added to the plaintiff's suffering and prolonged his illness. It may have contributed in bringing about the unfortunate physical condition in which he subsequently found himself. The proof, however, left it all to conjecture. That this specific act of negligence could not be made a basis for recovery unless the plaintiff was injuriously affected by it was, of course, too plain to require elaboration; yet the elementary principle involved in this statement was violated by the instruction under consideration.

Of two other instructions, one was a mere abstract statement of the law as to the degree of knowledge or skill which one who holds himself out as a specialist must bring to the discharge of his duty in treating patients. It contained no direction of any kind which would enable the jury to make an intelligent application of the rule stated to the issues in the case. The second instruction simply defined negligence as a failure to exercise ordinary care. As applied to the degree of care that the defendant was bound to exercise in treating the plaintiff, the two instructions, in the form in which they were given, were apparently contradictory, and consequently were calculated to confuse the jury.

Because of the error in giving the instruction mentioned first, the judgment for $15,000 damages which was rendered in favor of the plaintiff is reversed and the cause remanded for another trial.

Presumption Against Suicide—Mind of Drunken Man

(Webster v. New York Life Ins. Co. (La.), 107 So. R. 599)

The Supreme Court of Louisiana, in deciding that the plaintiff was entitled as beneficiary to recover the double indemnity benefit provided for in a life insurance policy, which she claimed on the ground that the death of the insured resulted solely from bodily injury caused by the accidental discharge of a pistol, while the defense was that the insured committed suicide, says that the presumption against suicide must prevail for lack of evidence that the insured was actuated at the time by any sufficient motive to take his own life. The question whether a death was the result of accident or suicide is not a question of science or legal knowledge, but a question of fact, to be determined as such, and in view of the circumstances of fact attending it; and each such case must therefore stand on its own particular facts and circumstances.

Among the circumstances to which courts attach weight in determining whether an assured came to his death by accident or suicide are: (1) physical circumstances attending the death, such as time, place, means of death, position of body, nature of wound, and the like; (2) preparations for death, statements, letters, previous attempts at suicide, etc.; and (3) motive, if any, touching which attention is to be paid to the age and health, habits, disposition and temperament, domestic and social relations, pecuniary circumstances, and the like. To the absence of adequate motive for suicide courts have always attached the highest importance in cases in which the defense to a suit on an insurance policy is that the insured committed suicide.

According to the weight of authority is a presumption against suicide, even when the circumstances point with certainty to the conclusion that the insured killed himself. In such a case, when there is nothing from which it can be determined whether the act producing death was accidental or intentional, the presumption is that it was accidental. But the presumption against suicide does not exist where it appears that the insured was insane. Where a man is afflicted with frenzy, melancholia, suicidal mania or the like, it is to do violence to the facts to say that he did not do the thing which men in his state of mind usually or commonly feel impelled to do. And where there is a suicide note or clear evidence of unequivocal declarations of intention to commit suicide, there is no presumption against suicide.

The insured had had several drinks, and "several drinks" of the vile stuff that is being bootlegged around is enough to make any man very drunk and "act crazy"; "act strange." Now the days of drunken men are not so far removed in the past that persons of ordinary experience and observation do not remember that the mind of a drunken man becomes a "one-track mind," imbued with only one idea at the time, whatever that may be, from which it cannot be shaken, and around which it continually revolves, ad nauseam. The insured had in his mind the one fixed idea of taking his baby riding, and that his wife was preventing him from carrying out his purpose. And, being intoxicated, he naturally felt the physical discomfort which any other sick animal would have felt, for intoxication is sickness. The court is not here arguing that the habit of getting intoxicated is a disease; it is merely stating the fact that an intoxicated man is at the moment suffering from a derangement of his normal physical condition. In that sense the insured was sick and could not but feel the physical discomfort attendant on such a condition. That was a mere physical sensation and was not inconsistent with what was uppermost and alone in his mind; and he may instinctively have sought for relief in sleep or in lying down, undressing and looking for his nightclothes from sheer force of habit. But the point which the court means to emphasize is that the insured, obsessed as he was, until the very moment that his wife fled, with the idea of taking the baby riding, against his wife's opposition, had at that time no room in his drunken head for any remorse over robbing his employer, if he did so, or fear of detection, if there were any, and had no time to become worked up to the point of desperation over any such thoughts, even if they came to him, in the few moments that elapsed between the flight of his wife and the discharge of the fatal shot. Hence there was more than room for doubt that he was actuated by any such motive.

Injury from Food and Drink After Operation—Evidence

(City of Pawhuska v. Black (Okla.), 244 Pac. R. 1114)

The Supreme Court of Oklahoma, in affirming a judgment for $5,000 damages in favor of the plaintiff, says that in the municipal hospital owned and operated by the defendant city a resection was performed on her for a lock bowel and the existence of gangrene. The immediate results of the operation appeared to have been successful, but the plaintiff alleged that by reason of the negligence and lack of skill on the part of the nurses in charge of the hospital, and particularly in charge of her, she was permitted to drink water a few hours after the operation, and was given or served a meal, including green beans, a few days subsequent to the operation; that on each occasion she was made violently sick by reason of drinking the water and eating the beans, and that the attending physician found it necessary to reopen the incision and discovered what appeared to be a bean within the abdominal cavity; that about two weeks later she was served with a salad that caused her to be sick; and that by reason of this character of service she was caused to suffer great pain, and the final results of the operation were not successful, in that she had never fully recovered and had never been able to perform her duties as a housewife, and that she was in bad health as a result of the negligence of the defendant, its agents and employees.

The court does not agree with the contention that the judgment was excessive and not supported by the evidence. The nature of this case and the character of the injury complained of rendered it somewhat difficult of clear and conclusive proof. However, there was the evidence of a number of witnesses as to the general appearance and condition of the plaintiff prior to and subsequent to the operation, and the evidence of the attending physician supporting the allegation of damages in the plaintiff's petition. That was sufficient to sustain the verdict of the jury and the judgment of the trial court based thereon in finding that the plaintiff was injured, and that the same was the result of the negligence, carelessness and lack of skill on the part of the nurse in charge of the plaintiff at the hospital.

Complaint was made of the introduction, over objection, of certain evidence wherein the plaintiff was permitted to testify to certain statements made by the attending physician, in the presence of the nurse, the agent and employee of the defendant city. She was also interrogated concerning statements made by the physician when no one representing the defendant was present; but the objection in this instance was sustained, and the answer given by the witness was stricken out on motion of the defendant. The supreme court thinks that the testimony as to what the physician said in the presence of the nurse, and as testified to by an employee, was incompetent and inadmissible on the ground that it was hearsay; but since the physician testified in the case and reiterated the statements made by the witness as hearsay, the evidence given by the physician would be admissible and the hearsay evidence would be harmless.

It was argued that a municipal corporation cannot be held liable for negligence in operationg a hospital where it is operated by the municipality in its governmental capacity. But this court distinguishes between the exercise of a legislative or governmental power, and what is termed a proprietary or quasiprivate business engaged in by municipal corporations, and holds that a paying patient in a hospital conducted by a municipality may recover damages for injury done her through the negligence of attending nurses, employed by the hospital, administering to her during an operation and her confinement in the hospital.

Compensation for Loss Both of Sight and of Eyeball

(Shaughnessy v. Diamond Iron Works et al. (Minn.), 208 N. W. R. 188)

The Supreme Court of Minnesota, in affirming an award of compensation under the workmen's compensation act of that state for the loss of an eye, says that the claimant was a machinist employed by the iron works. In December, 1922, while he was operating a lathe, a small piece of steel struck his right eye and injured it to such an extent as to cause "industrial" blindness in that eye. He was paid full compensation for the loss of the sight of the eye by the insurer. Jan. 3, 1925, while working at the same machine for the same employer, which still had the same insurer, a small particle of metal or emery dust struck the same eye, and was later removed by the same physicians who had treated him for the previous injury. January 30, panophthalmitis developed, which necessitated the removal of the eyeball. Thereafter the claimant brought this proceeding against both employer and insurer to recover compensation for the loss of the eye. The defendants contended that, having paid full compensation for loss of the use of the eye resulting from the first accident, they could not be required to pay compensation for loss of the eye resulting from the second accident. But this was no longer an open question, having been considered in four previous cases. It was recognized that such an award resulted in giving the claimant double compensation for the impairment of his earning power, but the court felt constrained to give effect to the plain language of the statute. As the statute giving compensation for the loss of a member makes no exceptions, the present case fell within it. The evidence tending to show causal connection between the second accident and the infection which necessitated the removal of the eye was weak as compared with the opposing evidence, but this court thinks that it was sufficient to make a question of fact, and the finding must stand.

Society Proceedings

COMING MEETINGS

District of Columbia, Medical Society of, Washington, D. C., Dec. 1. Dr. C. B. Conklin, 1718 M Street, N. W., Washington, D. C., Sec'y.
Isthmian Canal Zone, Medical Association of, Ancon, Dec. 21. Dr. Lawrence Getz, Hospital Santo Tomas, Panama City, Panama Canal Zone, Secretary.
Philippine Islands Medical Association, Manila, Dec. 14-17. Dr. I. Concepcion, College of Medicine and Surgery, Manila, P. I., Secretary.
Radiological Society of North America, Milwaukee, Nov. 29-Dec. 4. Dr. Robert J. May, 3005 Euclid Avenue, Cleveland, Secretary.
Society of American Bacteriologists, Philadelphia, Dec. 28-30. Dr. James M. Sherman, Cornell University, Ithaca, New York, Secretary.
Southern Medical Association, Atlanta Ga., Nov. 15-18. Mr. C. P. Loranz, Empire Building, Birmingham, Ala., Secretary.
Southern Surgical Association, Biloxi, Miss., Dec. 14-16. Dr. R. L. Payne, Medical Arts Building, Norfolk, Va., Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

38: 1-175 (Sept. 15) 1926

*Leukocytes and Lactation. V. E. Emmel, H. L. Weatherford and M. H. Streicher, Chicago.—p. 1.

Fate of Extruded Erythrocytes: Their Removal by Lymphatic Capillaries and Tissue Phagocytes, as Seen in Living Amphibian Larvae. E. R. Clark and E. L. Clark, Augusta, Ga.—p. 41.

Compensatory Enlargement of Surviving Kidney After Hydronephrosis (Albino Rat). M. Arataki.—p. 71.

Epidermal-Ridge Configurations in Developmental Defects: Ontogenetic Factors Which Condition Ridge Direction. H. Cummins, New Orleans. —p. 89.

*Arterial Blood Supply of Mammalian Kidney. D. B. MacCallum, Chicago.—p. 153.

Leukocytes and Lactation.—Contrary to prevalent statements that no definite leukocyte reaction occurs in relation to the activities of the mammary gland, the data presented by Emmel et al. demonstrate that during active nursing in the albino rat a leukopenia of as much as from one half to two thirds of the total leukocyte content of the circulating blood may occur. The correlated changes within the circulation and the mammary gland demonstrate that leukocytes participate to a pronounced degree in the activities of lactation, and contribute a definite cellular constituent to the composition of milk.

Arterial Blood Supply of Kidney.—MacCallum states that the circulation of the kidney is primarily a glomerular circulation, and every artery which enters the substance of the kidney terminates exclusively in glomeruli. The exceptions to this law are rare and of slight functional significance.

American Journal of Hygiene, Baltimore

6: 621-717 (Sept.) 1926

*Seasonal Factors in Incidence of Acute Respiratory Infections. D. F. Smiley, Ithaca, N. Y.—p. 621.

Anaerobic Spore-Bearing Bacteria in Baltimore Milk. E. A. Bliss.—p. 627.

Successful Application of Culture Method to Diagnosis of Intestinal Flagellates in Field. C. M. Hill, Baltimore.—p. 646.

*Study of Indol Tumor of Carrel in Reference to Gye's Hypothesis Regarding Origin of Malignant Growths. C. E. Simon and M. D. Beck, Baltimore.—p. 659.

*Gastroduodenal Bactericidal Mechanism. L. Arnold and L. Brody, Chicago.—p. 672.

Brazilian Mosquitoes: I. Anophelines of Nyssorhynchus Group. F. M. Root, Baltimore.—p. 684.

Seasonal Factors in Incidence of Acute Respiratory Infections.—Smiley's observations indicate that there is apparently a definite reciprocal relationship between the incidence of the acute respiratory infections and the mean outside atmospheric temperature, as well as the average daily hours of sunshine.

Origin of Malignant Growths.—On the basis of their observations in connection with Carrel's indol tumor, Simon and Beck incline to the conclusion that Gye has not furnished satisfactory proof that the formation of tumors of the type of the Rous sarcoma is due to the activation of a per se inactive virus by a special factor which is present in the tumor tissue itself. They believe that the comparatively few positive results which he has recorded can be explained more satisfactorily on the basis of a summation of subinfective doses of the virus itself, when primary cultures are concerned, or of the activation of subinfective doses of the virus in the tumor extracts by some factor present in the cultures. The latter possibility has recently received considerable support through Murphy's observation that apparently inactive chloroformed tumor extracts may be rendered active again by the addition of sterile placenta or embryonic tissue.

Gastroduodenal Bactericidal Mechanism.—Arnold and Brody assert that bacteria introduced into an empty stomach of a dog, from twelve to eighteen hours after a meal, do not reach the cecum. Bacteria introduced with alkaline buffered milk reach the cecum in large numbers over a relatively long period of time. Bacteria introduced with acid buffered milk sometimes reach the cecum, but in small numbers and over a relatively short period of time. Bacteria introduced into the stomach in an acid buffered aqueous solution seldom reach the cecum. When suspended in alkaline buffered aqueous solutions, the bacteria reach the cecum in almost the same concentration as the original ingested suspension. The "autodisinfecting" mechanism of the upper part of the small intestine is dependent on the presence of acid buffered material in its contents. This reaction is insured in the healthy animal by normal gastric secretory function. When neutral or alkaline buffered material enters the duodenum, this bactericidal power is lost, and the bacterial content of such material is passed on to the cecum.

American Journal of Public Health, Albany, N. Y.

16: 869-973 (Sept.) 1926

Public Health Problems Needing Research. E. G. Williams, Richmond, Va.—p. 869.

*Ice Cream as Cause of Epidemics. F. W. Fabian, East Lansing, Mich. —p. 873.

*Apparatus for Generating Hydrocyanic Gas for Disinfecting. W. R. Stokes, Baltimore.—p. 880.

*Automobiles and Public Health. W. J. McConnell, Washington, D. C. —p. 884.

School Sanitation from Standpoint of School Administrator. J. R. McLure, University, Ala.—p. 887.

*Perrysburg—Mecca for Heliotherapy. R. E. Fitzgerald, Perrysburg, N. Y.—p. 893.

Cream Quality and Sanitary Control. J. H. Shrader and R. S. Craig, Baltimore.—p. 897.

Widal Test as Carried Out in Public Health Laboratories. T. G. Hull, Springfield, Ill.—p. 901.

Ice Cream as Cause of Epidemics.—It is believed by Fabian that the same sanitary precautions should be taken by health officers and by state and city boards of health in protecting the ice cream supply as are taken with the milk supply. Three safeguards are suggested: 1. Pasteurizing the ice cream mixture at 150 F. for thirty minutes. 2. Establishing a bacteriologic standard, 100,000 bacteria (colonies) per gram. 3. Regular sanitary inspection of ice cream plants.

Apparatus for Generating Hydrocyanic Acid Gas.—Stokes describes a gas tight apparatus that can be safely used for generating hydrocyanic acid outside the room to be fumigated. Roaches exposed freely to the gas can be killed by from 125 to 250 Gm. of sodium cyanide for every 1,000 feet of air space. It seems to Stokes that some such apparatus could be used not only to destroy the vectors of such diseases as bubonic plague, yellow fever, malaria and typhus fever but also to get rid of such annoying insects as bedbugs and roaches.

Automobiles and Public Health.—The present public health problem so far as the automobile is concerned, McConnell says, lies chiefly in the possible hazardous effects on pedestrians of carbon monoxide fumes discharged in the exhaust gases. The extent of the harmfulness of this gas is best determined by a continuous record of the fluctuations in concentration. The final step lies in proper control of tunnels and passage ways through the operation of an adequate ventilating system.

Heliotherapy at Perrysburg.—The J. N. Adam Memorial Hospital at Perrysburg, N. Y., has the distinction of being the first municipal hospital in the United States to introduce the Rollier method of heliotherapy. According to Fitzgerald, hundreds of patients come here for treatment every year until Perrysburg has come to be in the United States what Leysin is to Europe. At this hospital, the city of Buffalo cares for its cases of incipient pulmonary and all forms of surgical tuberculosis. It is the only hospital in the world having a zoo for the entertainment and pleasure of its patients. Each year several different species of animals have been added, so that now child patients have an unusual opportunity to study animal life at first hand.

Annals of Otology, Rhinology and Laryngology, St. Louis

35: 601-968 (Sept.) 1926

Trigeminal Neuralgia. A. W. Adson, Rochester, Minn.—p. 601.
Monaural Tests on Bone Acuity. A. G. Pohlman, St. Louis, and F. W. Kranz, Geneva, Ill.—p. 632.
Acoustic Filtering. G. W. Stewart, Iowa City.—p. 642.
Otosclerosis. D. W. Drury, Boston.—p. 651.
Colds, Infections and Pseudocolds. W. Freudenthal, New York.—p. 682.
Rôle of Ciliated Epithelium in Sinusitis. F. L. Phillips, New Haven, Conn.—p. 709.
Maxillary Sinus. R. H. Skillern, Philadelphia.—p. 717.
Rhinologic Aspects of Allergy. G. M. Coates, Philadelphia.—p. 723.
Diagnosis and Treatment of Allergic Diseases. H. B. Wilmer, Philadelphia.—p. 733.
Nature of Hay-Fever and Bronchial Asthma. J. A. Kolmer, Philadelphia.—p. 758.
Alkaloids of Ceanothus Americanus: Use in Control of Hemorrhage in Laryngology. R. J. Payne, St. Louis.—p. 769.
Lateral Sinus Thrombosis; Five Cases. E. F. Chase, Seattle, Wash.—p. 791.
Embolus of Cochlear Artery. I. H. Jones, Los Angeles.—p. 812.
Plan for Group Testing of Hearing of School Children. V. O. Knudsen and I. H. Jones, Los Angeles.—p. 817.
Relation of Minor Injuries to Nose During Childhood to Subsequent Deformities of Organ. W. W. Carter, New York.—p. 825.
Mucocele of Frontal Sinus. L. Daily, Houston, Texas.—p. 834.
Radical Mastoid Surgery: End Results. E. M. Seydell, Wichita, Kan.—p. 838.
Cure of Chronic Suppurative Nasal Conditions by Draining Through Maxillary Antrum. F. Stauffer, Salt Lake City.—p. 845.
Congenital Osseous Occlusion of Posterior Choanae: Case. J. H. Roth and C. W. Geiger, Kankakee, Ill.—p. 849.
Rôle of Ophthalmologist and Otorhinolaryngologist in Diagnosis of Ductless Gland Disease. H. Lisser, San Francisco.—p. 856.
Operations on Maxillary and Frontal Sinuses. T. E. Oertel, Augusta, Ga.—p. 866.
Laryngeal Cysts: Cases. W. B. Mason, Washington, D. C.—p. 873.
Use of Isotonic Solutions for Nasal Administration. J. E. Rush, Lexington, Ky.—p. 880.
Acute Suppurative Otitis Media Causing Septic Arthritis Without Observable Symptoms of Intervening Mastoiditis or of Involvement of Lateral Sinus. F. A. Kiehle, Portland, Ore.—p. 884.
Cavernous Sinus Thrombosis. C. T. Uren, Omaha.—p. 890.
Coryza and Chlorine Gas. A. D. Knisely, Lima, Ohio.—p. 897.
Bronchoscopic Studies of Some Conditions of Respiratory Tract. S. Jesberg, Los Angeles.—p. 905.
What is Wrong with Tonsil Operation? F. T. Hill, Waterville, Me.—p. 913.
Case of Acute Mastoiditis Accompanied by Unusual Fistula Symptom. A. Zebrowski, Warsaw.—p. 937.
What Septa Demand Operation? F. J. Pratt, Minneapolis.—p. 940.

Archives of Physical Therapy, X-Ray, Radium, Omaha

7: 443-505 (Aug.) 1926

Effects of Radiotherapy: Value in Clinical Medicine. A. W. Jacobs, New York.—p. 443.
Hydrotherapy Among Physiotherapists. R. E. Peck, New Haven, Conn.—p. 462.
Traumatic Myositis Ossificans: Case. R. W. Fouts, Omaha.—p. 470.
Uterine Replacement by Galvanism. M. J. Breuer, Lincoln, Neb.—p. 478.
Application of Physical Therapy to Goiter and Associated Diseases. T. R. Montgomery, Memphis, Tenn.—p. 481.
Work Accuracy. W. J. Manning, Washington, D. C.—p. 484.

Atlantic Medical Journal, Harrisburg, Pa.

20: 825-939 (Sept.) 1926

*Diabetes in Children. H. R. Geyelin, New York.—p. 825.
Dietetic Treatment of Nephritis and Obesity. H. D. Jump, Philadelphia.—p. 830.
Therapeutic Value of Roentgen Rays, Radium and Electrocoagulation. G. E. Pfahler, Philadelphia.—p. 833.
Biologic Therapy of Diseases. J. A. Kolmer, Philadelphia.—p. 837.
Bronchoscopic Aspects in Diagnosis of Nontuberculous Pulmonary Disease. L. H. Clerf, Philadelphia.—p. 839.
*Roentgen-Ray Diagnosis of Nontuberculous Diseases of Lungs. W. F. Manges, Philadelphia.—p. 843.
*Eczema in Infants, Children and Adults. S. Crawford, Pittsburgh.—p. 845.
Etiology of Eczema. E. F. Corson, Philadelphia.—p. 847.
*Treatment of Eczema. L. G. Beinhauer, Pittsburgh.—p. 850.
Function of Thymus Gland. S. Goldschmidt, Phialdelphia.—p. 852.
Thymus Death in Early Life. J. C. Gittings, Philadelphia.—p. 853.
Thymic Death in Adult During Tonsillectomy Under Local Anesthesia. D. N. Husik, Philadelphia.—p. 857.
Early Treatment of Fractures of Long Bones. E. L. Eliason, Philadelphia.—p. 859.
Treatment of Compound Fractures. J. H. Wagner, Pittsburgh.—p. 864.
Factors Other Than Mechanical That Influence Healing of Fractures. W. L. Estes, Jr., Bethlehem, Pa.—p. 866.
Intravenous Use of Mercurochrome in Otitis Media. J. D. Denny, Columbia, Pa.—p. 869.
Traumatic Diaphragmatic Hernia. L. F. Stewart, Clearfield, Pa.—p. 870.
*Massive Intersigmoid Hernia. F. P. McCarthy, Erie, Pa.—p. 872.
Our Responsibility to Those in Darkness. L. W. Fox, Philadelphia.—p. 873.

Diabetes in Children.—Observation has convinced Geyelin that "benign glycosuria" is a better descriptive term, including cases of so-called renal glycosuria, and intermittent glycosuria. None of the cases seen by him has as yet developed true diabetes. In a series of fifty-one insulin-treated diabetic children, there have been but four deaths in three years. None of these deaths could be attributed to diabetes. Generally speaking, the improvement of diabetic children on higher carbohydrate and lower fat diets has been more satisfactory than in the lower carbohydrate and higher fat diets.

Roentgenoscopy of Lungs.—Manges asserts that any pathologic process involving any portion of the lung that is capable of producing physical signs and symptoms can also be demonstrated by means of roentgen rays.

Dermatitis, Not Eczema, Correct Term.—Crawford avers that fully 75 per cent of the so-called eczemas of adults are traceable to some external irritant. The term "eczema" should therefore give way to the term "dermatitis." The word dermatitis invites search for a cause, while the term eczema induces a mental lethargy defeating investigation. At present, broadly speaking, one may consider eczema as due to external and internal factors. The majority of cases are due to external factors, and should be classed with the venenate dermatoses. The minority are due to internal factors, such as sensitization or allergic phenomena, and to this group only is the term eczema rightfully applied.

Treatment of Eczema.—Beinhauer regards the roentgen ray as being the best remedy for the treatment of eczema, because of its use as an antipruritic and resolvent agent. Too much must not be expected from it, however, and it should be always utilized together with all possible attempts to eliminate the causative factors. This point is absolutely essential. Together with radiation, the patient should receive the benefit of regular dermatologic treatment administered intelligently, and care should be taken not to use strong or irritating drugs when it is employed. In acute cases it should be used on localized areas in fractional unfiltered dosages, and when generalized, in a similar manner, exposing only one part of the body daily. In subacute and chronic cases, it can be used more freely and in stronger exposures. The roentgen ray cannot be omitted in the treatment of eczema. Radium, seldom used, has an action similar to the roentgen ray. The ultraviolet ray allays pruritus and promotes healing, but its use should be selective.

Massive Intersigmoid Hernia.—The portions of the bowel involved and strangulated in the case reported by McCarthy were all of the ileum except the terminal three inches, all of the jejunum except the proximal eight inches, all of the lower half of the descending colon, and almost all of the sigmoid.

Boston Medical and Surgical Journal

195: 561-604 (Sept. 16) 1926

Prevention and Treatment of Scarlatina, Measles and Diphtheria. D. O'Hara, Waltham, Mass.—p. 561.
*Rehabilitation in Tuberculosis. J. B. Hawes, Jr., Boston.—p. 567.
*Hilum Tuberculosis. R. Clifford, Boston.—p. 571.
*Rehabilitation of Tuberculous. M. H. Joress, Rutland, Mass.—p. 575.
Antituberculosis Work of Today. J. Ritchie, Malden, Mass.—p. 579.

Rehabilitation in Tuberculosis.—Hawes reports on the work of the Placement Committee of the Boston Tuberculosis Association during 1925. One hundred and forty-one ex-sanatorium patients came to the bureau, forty-eight from sanatoria or other medical sources; forty-one were self-referred, twenty-four came from welfare agencies, and forty-eight from friends. Of these, fifty, or 35 per cent, were successfully placed or given vocational training; sixteen found their own jobs, making a total of sixty-six who received work. Of the seventy-five who were not placed, thirty-seven were found to have an active process in their lungs. It is worthy of note that most of these came from the "self-referred group." Eleven were in need of financial relief, eighteen were suffering from other disabilities, four relapsed, and the remainder drifted away.

Diagnosis of Hilum Tuberculosis.—Before making a diagnosis of hilum tuberculosis, Clifford says the following conditions must be present: (*a*) a definite history of exposure; (*b*) a positive tuberculin test; (*c*) definite constitutional signs and symptoms denoting tuberculous toxemia, the most important of these being fatigue, malnutrition, underweight, lassitude and nervous irritability; (*d*) evidence by roentgen-ray examination of enlarged hilum glands; and (*e*) physical signs indicating enlargement of the bronchial glands. The most important of these, in Clifford's opinion, are the constitutional signs and symptoms.

Rehabilitation of Tuberculous.—The work done in rehabilitation of the tuberculous in Europe and America is discussed by Joress as a preliminary to that done at the Rutland State Sanatorium, where discharged patients are given employment as a means to rehabilitation. The percentage of tuberculous employees has varied from 50 to 65. Through this custom of employing discharged patients, many have been enabled to live and to support themselves who might otherwise have gone back to civilian life and unsuitable and unhealthful employment, or to unsuitable surroundings at home, and under such conditions might have broken down or become permanent dependents. By means of this scheme of rehabilitation, patients have been enabled to earn money and become self-supporting; to live the sanatorium life, enabling them to continue "curing" after working hours; and, most important, to work under strict medical supervision; i. e., to have a regular follow-up, which is so essential in the tuberculosis problem.

California and Western Medicine, San Francisco

25: 289-432 (Sept.) 1926

Relation Between Physician and Patient. H. D. Lawhead, Woodland, Calif.—p. 321.
Suprapubic Prostatectomy. V. C. Hunt, Rochester, Minn.—p. 325.
Pathology of Sensibility. B. Brouwer, Amsterdam.—p. 329.
Birth Inpuries from Obstetric Standpoint. F. M. Loomis, Oakland, Calif.—p. 330.
*Recurrent Toxemia of Pregnancy. H. v. Geldern, San Francisco.—p. 333.
Antiscientific Propaganda. P. Frandsen, Reno, Nev.—p. 336.
Scarlet Fever. E. Bogen, Los Angeles.—p. 338.
*Resection of Kidney for Stone. A. J. Scholl, Rochester, Minn.—p. 341.
*Vincent's Infection: Precursor of Pyorrhea; Cause of Other Diseases. E. M. Burns, Huntington Park, Calif.—p. 344.
*Intravenous Use of Sodium Cacodylate, Mercurochrome-220 Soluble, and Gentian Violet in Malignant Endocarditis. W. H. Leake, Los Angeles.—p. 346.
*Symptoms of Exophthalmic Goiter Which are Practically Diagnostic. A. E. Mark, Los Angeles.—p. 350.
Infectious Mononucleosis: Five Cases. H. E. Butka, Los Angeles.—p. 353.
Late Nodular Syphilide. D. W. Montgomery, Oakland, Calif.—p. 356.
*Quantitative Estimation of Albumin in Urine. A. M. Moody and L. Stocking, San Francisco.—p. 359.
Education of Public in Elementary Medical Science. G. E. Coleman, Santa Barbara.—p. 360.
Kyphosis Dorsalis Adolescentium: Case. A. Gottlieb, Los Angeles.—p. 368.
Oxycephaly and Rickets in One of Pair of Single Ovum Twins. F. F. Gundrum, Sacramento, Calif.—p. 370.

Recurrent Toxemia of Pregnancy.—A large proportion of pregnancy toxemias recur in subsequent pregnancies, and more than one fourth of these are complicated by chronic nephritis. Geldern feels that it is essential to segregate the chronic nephritic patients from this group because they invariably have a poor prognosis. Kidney function tests will aid not only in making this differentiation but in determining the prognosis in future pregnancies. The ultimate outcome of the patients with recurrent toxemia is doubtful, but carefully planned prenatal care, with the aid of kidney function tests and good judgment as to the time to terminate pregnancy, will carry through at least 75 per cent satisfactorily. The urgent need of systematic follow-up work between pregnancies is recognized.

Determination of Urea Retention.—Scholl uses the salivary urea index in all his determinations of urea retention. This test is simple and easily carried out, requiring only a few minutes and very little apparatus. It has the further advantage that, when boiled, saliva may be sent a long distance, without deteriorating or detracting from the accuracy of the test.

Vincent's Organism as Cause of Systemic Diseases.—Burns contends that Vincent's organism may be responsible for many diseases of the body as a whole, such as anemia, dysenteric enteritis, dermatoses and pyorrhea. In smears made from 120 women, 80 per cent were positive for spirilla and fusiform bacilli. More than a thousand patients were recognized as suffering from the same infection, but the diagnoses were not confirmed by smear examination. Three patients with marked anemia, apparently secondary to some systemic infection, had dirty mouths, which proved to be heavily positive to Vincent's organism. They were all under the age of 35 and, in addition to anorexia and anemia, each represented a distinct type. One was "rheumatic," one was suspected of being tuberculous, although the sputum was repeatedly negative, while in the other symptoms indicated disturbances of the gastro-intestinal tract. The roentgen-ray examination showed no root abscesses. The infecting organisms disappeared, and all patients improved rapidly under spirocheticidal treatment.

Value of Antiseptics in Malignant Endocarditis.—Leake has observed the effect of sodium cacodylate, mercurochrome-220 soluble and gentian violet in nine patients with subacute bacterial endocarditis, one with acute nonhemolytic streptococcus endocarditis, and one with acute hemolytic streptococcus endocarditis. Sodium cacodylate was administered intravenously in daily doses of from 3 to 5 grains (0.2 to 0.33 Gm.) and with few exceptions the drug was pushed until a strong garlic odor was detected on the breath. Mercurochrome and gentian violet were given intravenously in doses ranging from 2 to 5 mg. per kilogram of body weight. Freshly prepared 1 per cent aqueous solutions were used. The diagnosis was confirmed by blood culture in ten of the eleven patients, and in the eleventh the organisms were obtained from the vegetations at necropsy. The results were uniformly disappointing. Sodium cacodylate produced no unpleasant or alarming symptoms except for the so-called garlic breath. Mercurochrome in the dosage advocated by Young and Hill frequently produced marked salivation, but this was rarely observed when the dosage was reduced. Severe systemic reactions consisting of chills, high fever and general malaise frequently followed the use of mercurochrome. Except for an intense cyanosis of short duration, gentian violet produced no untoward symptoms.

Diagnosis of Exophthalmic Goiter.—Mark holds that the usual textbook symptoms of exophthalmic goiter, with the exception of bilateral exophthalmos, are not of much diagnostic value. Pulse rates which are persistently above 80, especially during sleep, should be looked on with suspicion, and every effort made to rule out disease, especially hyperthyroidism. Quadriceps power loss is one of the most important diagnostic symptoms of exophthalmic goiter. A feeling of sustained warmth for weeks or months in the absence of fever is practically pathognomonic. A history of ravenous appetite is practically always present at some time during the disease. Weight loss, together with a ravenous appetite, are to be found only in patients with hyperthyroidism and diabetes mellitus. Thrills and bruits over the superior thyroid vessels occur in from 60 to 80 per cent of cases, and when louder here than over the inferior thyroid vessels are practically diagnostic. The tendency for exophthalmic goiter patients to develop crises is quite marked. Properly done metabolic readings, repeated as needed, offer the most absolute method of diagnosis, especially in borderline cases. Response of exophthalmic goiter patients to compound solution of iodine amounts almost to a therapeutic test.

Quantitative Estimation of Albumin.—Moody and Stocking relate the details of an accurate and rapid method for the quantitative estimation of albumin in the urine. The procedure is as follows: In a graduated centifuge tube of 15 cc. capacity is placed 10 cc. of urine to be tested, and in another similar tube 10 cc. of standard serum solution; then to each tube is added 5 cc. of Tsuchya's reagent (phosphotungstic acid, 15 Gm.; hydrochloric acid, 50 cc., made up to 1,000 cc. with 95 per cent alcohol). This is mixed thoroughly by inverting back and forth and let stand for ten minutes, and then the tubes are placed in the centrifuge and centrifugalized for from three to five minutes. The amount of precipitate in each tube is recorded and the result calculated. The standard tube reading equals 6 Gm. of albumin per liter.

Canadian Medical Association Journal, Montreal

16: 1021-1164 (Sept.) 1926

Diabetes. I. M. Rabinowitch, Montreal.—p. 1021.
Modern Evolution of Gynecology. E. M. Blair, Vancouver, B. C.—p. 1028.
Acute Arthritis. A. Gibson, Winnepeg.—p. 1033.
Low Function Kidney. D. W. MacKenzie and M. I. Seng, Montreal.—p. 1039.
Medical Aspects of Duodenal Ulcer. H. C. Moffit, San Francisco.—p. 1044.
Surgical Treatment of Duodenal Ulcer. F. N. G. Starr, Toronto.—p. 1051.
Duodenal Ulcer: Radiologic Aspect. W. H. Dickson, Toronto.—p. 1053.
*Nephrosis of Thyroid Origin. J. R. Davidson, Winnepeg.—p. 1059.
*Chronic Mastitis. A. J. Grant, London.—p. 1064.
*Allergic Diseases of Childhood. G. A. Campbell, Ottawa.—p. 1070.
Newer Drugs; Their Use and Abuse. V. E. Henderson, Toronto.—p. 1077.
Treatment of Fractures. G. A. Ramsay, London.—p. 1083.
*Nonrelation of Malnutrition in School Children to Infection. H. W. Hill and E. Breeze, Vancouver, B. C.—p. 1086.
Expectations and Realizations from Routine Roentgenologic Gastro-Intestinal Examination. A. S. Kirkland, St. John, N. B.—p. 1093.
Carcinoma of Prostate. W. D. Rankin, Woodstock, N. B.—p. 1097.
Psychotherapy; Psycho-analysis. N. Viner, Montreal.—p. 1100.
Case of Subparathyroid Tetany Treated with Collip's Extract of Parathyroid. J. R. Monteigh and A. T. Cameron, Manitoba.—p. 1104.
Case of Acute Yellow Atrophy of Liver. O. A. Cannon, Hamilton, Ont.—p. 1106.
Case of Hemothorax in New-Born Infant. S. G. Ross, Montreal.—p. 1108.
Complete Heart Block; Case. C. R. Bourne, Montreal.—p. 1110.
Impacted Tooth with Infection. J. I. Ferguson, London.—p. 1111.
Case of Tubal Pregnancy. W. C. Harris.—p. 1111.

Nephrosis of Thyroid Origin.—Davidson calls attention to a type of nephrosis encountered particularly in female adolescents. In addition to having most of the symptoms of nephrosis, this type presents certain symptoms of myxedema. The skin and the hair are dry, and the palms of the hands and the soles of the feet are thick, rough and scaly. The mental processes are slowed. Weakness and loss of memory are almost always present. The patient is often listless, drowsy and slow of speech, and has an altered voice. The menses are irregular or, more usually, suppressed. Three cases are reported. All these patients were benefited by thyroid medication.

Chronic Mastitis.—Grant asserts that many cases of chronic mastitis will respond to simple measures, and that operative treatment is not justified unless one or more definite tumor masses are palpable.

Allergic Diseases of Childhood.—An allergic heredity was found by Campbell in 42 per cent of cases. Silk protein gave more positive reactions than any other protein found in clothing. Campbell urges that desensitization be commenced with most minute doses; otherwise, fatal reactions may occur. The results in urticaria and cyclic vomiting have been disappointing.

Malnutrition Among School Children.—An investigation made by Hill and Breeze of about 8,000 records of school children in Vancouver yielded no evidence of any relation between malnutrition and the incidence of infection; each group, well nourished and malnourished, showed practically identical incidence of infection.

Colorado Medicine, Denver

23: 293-318 (Sept.) 1926

Social Factors in Medical Practice. C. H. Platz, Casper, Wyo.—p. 300.
Gastro-Intestinal Problems. W. S. Dennis, Denver.—p. 302.
Acute Mastoiditis. T. E. Beyer, Denver.—p. 306.
*Treatment of Bronchial Asthma with Sodium Iodide. J. Boch, Denver.—p. 310.

Treatment of Bronchial Asthma with Sodium Iodide.—Boch reports that he has obtained definite relief from the use of sodium iodide in 84.6 per cent of his cases. The sodium iodide was given in amounts of from 30 to 150 grains (2 to 10 Gm.) in twenty-four hours, 30 to 50 grains (2 to 3.25 Gm.) being given from once to three times a day when shortness of breath was anticipated. No evident ill effects were observed from the administration of amounts of sodium iodide as large as 60 grains (4 Gm.) given eight times in twenty-four hours. The maximum amount required to give symptomatic relief in the cases studied was 250 grains (16 Gm.) over a period of twenty-four hours.

Florida Medical Association Journal, Jacksonville

13: 58-82 (Sept.) 1926

Surgical Treatment of Chronic Gallbladder Disease. J. K. Simpson, Jacksonville.—p. 58.
Surgical Treatment of Goiter. L. A. Wylie, St. Petersburgh.—p. 63.
Chronic Endocervicitis. B. Manhoff, Jacksonville.—p. 67.
Proposed Improvement in Serologic Diagnosis of Syphilis. W. W. Kirk, Jacksonville.—p. 69.
Plicectomy. C. J. Heinberg, Pensacola.—p. 71.
Roseola Infantum. N. L. Spengler, Tampa.—p. 72.
Three Cases of Metastatic Carcinoma in Bony Structures. G. Raap, Miami.—p. 73.

Illinois Medical Journal, Oak Park

50: 177-264 (Sept.) 1926

*Posterior Mediastinal Abscess in Tuberculosis of Dorsal Spine. A. Steindler, Iowa City.—p. 201.
Diagnosis and Treatment of Bladder Tumors. D. N. Eisendrath, Chicago.—p. 205.
Problems of Comparative Pathology of Interest to Physicians in Illinois. R. Graham, Champaign.—p. 210.
Emergency Lung Surgery. D. Macrae, Jr., Council Bluffs, Iowa.—p. 216.
Increasing Menace of Cancer. F. L. Hoffman, Newark, N. J.—p. 221.
Physical Examinations for Dentists. S. E. Munson, Springfield.—p. 229.
Slipping Patella; Rupture of Crucial Ligaments. C. R. G. Forrester, Chicago.—p. 230.
Management of Hypertension in Pregnancy. E. J. Stieglitz, Chicago.—p. 234.
*Roentgen Ray in Appendicitis. M. J. Hubeny, Chicago.—p. 235.
Limitations of Local Anesthesia. G. de Takats, Chicago.—p. 237.
Some Fundamentals and End Results of Roentgen-Ray Treatment. E. L. Jenkinson, Chicago.—p. 240.
*Possibilities of Rational Milk Therapy in Tuberculosis. O. Weinshenk, Chicago.—p. 242.
Relation of Malignancy to Untreated Fibroids of Uterus. T. H. Kelley, Chicago.—p. 248.
Treatment of Erysipelas with Mercurochrome-220 Soluble. I. Radeff, Dixon.—p. 249.
Some Indications for Surgical Treatment of Peptic Ulcer of Stomach and Duodenum. K. A. Meyer and W. A. Brams, Chicago.—p. 250.
*Enterocolic Fistula on Carcinomatous Basis. J. Brams and W. A. Brams, Chicago.—p. 253.
Significance of Pain in Paranasal Sinusitis. C. H. Long, Chicago.—p. 255.
Axis-Traction Forceps—Their Place in Obstetrics. J. J. Gill, Chicago.—p. 259.

Posterior Mediastinal Abscess in Spinal Tuberculosis.—In Steindler's series of 280 cases of tuberculosis of the spine, twenty-three, or 8 per cent, showed abscess formation in the posterior mediastinum, or 15 per cent of all cases of dorsal tuberculosis. Not less than fourteen of the twenty-three cases showed definite paraplegia from extension of the abscess or of tuberculous granulation into the canal and subsequent pressure on the cord. From the evidences gained at necropsy when the communication between the mediastinal abscess and the spinal canal could be demonstrated, the evacuation of the posterior mediastinum by costotransversectomy would appear a thoroughly rational procedure.

Roentgen Ray in Appendicitis.—Because the appendix may have a physiologic function, Hubeny urges that it be studied roentgenologically before removal in suspected chronic cases. Since the appendix possesses peristalsis, the roentgen-ray demonstration of appendical retention or rapid expulsion of barium is of diagnostic value. The appendix should be investigated by the barium method in many diseases, because of its reflex influence over the alimentary tract. When barium-filled, the appendix can be studied by the screen in great detail and accurately palpated for pressure-pain and adhesions.

Milk Therapy in Tuberculosis.—As milk contains the protein-calcium which has the property of impregnating tubercle bacilli and tuberculous foci, Weinshenk asserts that milk, kefir and kumiss must be the mainstay in the treatment of tuberculosis. Sanatoriums should have their own herds of milch cows and manufacture their own kefir. Kefir therapy should be introduced as a routine in the sanatorium treatment, and research laboratories for the study of kefir should be a part of the sanatorium equipment.

Enterocolic Fistula on Carcinomatous Basis.—A case of spontaneous enterocolic fistula due to carcinoma is reported by the Bramses. They could find only one other such report in the literature. The importance of diarrhea in which the stools contain undigested food eaten shortly before is emphasized as a significant manifestation of enterocolic or gastro-

enterocolic fistula. The absolute diagnosis of enterocolic fistula can be made with certainty on roentgenologic examination.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

28: 317-463 (Sept.) 1926

Toxicologic Properties of Certain Thiocarbamine Compounds. J. V. Supniewski, Baltimore.—p. 317.
Temperature and Epinephrine on Perfused Frog Heart: Relation of Epinephrine Response to Temperature and Rhythmic Vigor. O. W. Barlow and T. Solhmann, Cleveland.—p. 325.
Trypanocidal Action of Arsenicals. F. M. Durham, J. Marchal and H. King.—p. 341.
So-Called Habituation to "Arsenic." E. W. Schwartze and J. C. Munch, Washington, D. C.—p. 351.
Action of Morphine in Slowing Pulse. F. D. McCrea and W. J. Meek, Madison, Wis.—p. 361.
Some Effects of Quarternary Ammonium Compounds on Autonomic Nervous System. R. Hunt, Boston.—p. 367.
*Labile Sulphur in Blood. D. Campbell and E. M. K. Geiling, Baltimore. —p. 389.
*Stability of Hexylresorcinol in Pharmaceutical Preparation. W. A. Feirer and V. Leonard, Baltimore.—p. 395.
Blood Fibrin and Levulose Tolerance in Acute and Chronic Carbon Tetrachloride Intoxication. P. D. Lamson and R. Wing, Baltimore. —p. 399.
*Effects of Acetaldehyde, Ether Peroxide, Ethyl Mercaptan, Ethyl Sulphide and Several Ketones—Di-Methyl, Ethyl Methyl and Di-Ethyl —When Added to Anesthetic Ether. W. Bourne, Montreal.—p. 409.
Thrombocyte and Erythrocyte Changes Produced by Agents Causing Anaphylactoid Reactions. F. de Eds and V. Mitchell, San Francisco. —p. 433.
Thrombocyte and Erythrocyte Changes During Anaphylactic Shock in Pigeons. F. de Eds, San Francisco.—p. 451.

Labile Sulphur in Blood.—The observations made by Campbell and Geiling furnish evidence that there are substances in blood, probably of a protein nature, which yield sulphur as hydrogen sulphide on very mild alkaline hydrolysis.

Stability of Hexylresorcinol.—Feirer and Leonard conclude that hexylresorcinol, in solution in olive oil enclosed in soluble gelatin capsules, does not deteriorate on standing for one year at room temperature.

Action of Compounds in Ether on Blood Pressure.—The actions of certain compounds when mixed with anesthetic ether on blood pressure and respiration are summarized by Bourne as follows: Acetaldehyde up to 0.5 per cent does not produce any significant changes. With 1 per cent there is marked respiratory embarrassment, and consequent and concomitant effects on blood pressure; however, the animals recover well. Five-tenths per cent of ether peroxide causes a decided lowering of the blood pressure and pronounced respiratory disturbance. Three-tenths per cent, even after prolonged administration, does not noticeably affect the animal. Ethyl mercaptan, although a very foul material, does not have much influence when present up to 1 per cent. Ethyl sulphide in 1 per cent concentration produces an extremely severe gastro-enteritis. With three-tenths per cent or less, no such effect is caused, and the blood pressure and respiration are not altered. Di-ethyl ketone, ethyl methyl ketone and acetone are apparently indifferent in concentrations up to 5 per cent.

Journal of Preventive Medicine, Chicago

1: 1-123 (Sept.) 1926

*Changes in Type of Contagious Disease: Smallpox and Scarlet Fever. C. V. Chapin, Providence, R. I.—p. 1.
Protective Vaccination of Children Against Tuberculosis: Review. E. R. Long, Chicago.—p. 31.
*Fatality of Typhoid Fever in Chicago. I. S. Falk, Chicago.—p. 53.
Present Status of Botulism Problem: I. Pathogenicity, Toxicology and Immunology. E. C. Dickson, San Francisco.—p. 71.
Zone Phenomena in Vivo Trypanolysis and Therapeutic Value of Tryanolytic Serums. W. H. Taliaferro and T. L. Johnson, Chicago.—p. 85.

Changes in Type of Contagious Disease.—The facts presented by Chapin indicate, with considerable degree of probability, that the present mild character of scarlet fever is due to the selective force of isolation eliminating the severe strains.

Fatality of Typhoid in Chicago.—For many years the department of health and allied agencies have been active in improving the completeness and accuracy of typhoid registration in Chicago. It is considered that the records of reported cases and deaths for the fourteen years 1912-1925 are as accurate and complete as such records can be. From these records, Falk has attempted to determine the lethality of typhoid in the several months of the year, and in populations of restricted and specified age periods. The result of this study is, on the whole, encouraging.

Kansas Medical Society Journal, Topeka

26: 227-310 (Sept.) 1926

Management of Second Stage of Labor. J. P. Greenhill, Chicago.—p. 277.
Frequency of Pupil Anomalies in General Medical and Surgical Cases. W. C. Menninger, Topeka.—p. 282.
Influence of Kielland Forceps Technic in Instrumental Delivery. L. S. Nelson, Salina.—p. 287.
Aortitis; Complications. G. E. Knappenberger, Kansas City.—p. 288.

Medical Journal and Record, New York

124: 317-384 (Sept. 15) 1926

Gastro-Intestinal Diverticula. W. S. Bainbridge, New York.—p. 317.
Distribution and Reactions of Hey-Fever. W. Scheppegrell, New Orleans. —p. 323.
Treatment of Diseases of Vegetable Parasitic Origin by Mercury Injection. B. L. Wright, Balboa, C. Z.—p. 326.
Prevention of So-Called Bathers' Ear. G. B. McAuliffe, New York.—p. 327.
*Nature of Hemophilia; Etiologic Treatment. H. v. Samson-Himmelstjerna, Reval, Esthonia.—p. 329.
Immunization Against Scarlet Fever. H. S. Snyderman, Philadelphia. —p. 332.
Rectal Feeding. C. J. Drueck, Chicago.—p. 334.
Bachache; Etiology and Pathology. S. Kleinberg, New York.—p. 336.
*Efficiency of Strophanthine Sublingually Administered. J. L. Tracy, Toledo, Ohio.—p. 340.
Use of Expuralgin in Vascular Hypertension. E. W. Lipschutz, New York.—p. 341.
Endocrine Glands as Dominant Factors in Therapeutic Action of Light and Heat. C. E. de M. Sajous, Philadelphia.—p. 343.
Status Lymphaticus. R. S. Leadingham, Emory University, Ga.—p. 345.
Endocrine Diseases. J. W. Shuman, Los Angeles.—p. 348.
Studies with Thyrotoxic Blood and Epinephrine. R. L. Pitfield, Philadelphia.—p. 349.
Endocrine Glands of Rats in Parabiosis. G. Pighini and M. de Paoli, St. Maurizio, Italy.—p. 353.
Toothache Three and Half Centuries Ago. W. R. Riddell, Toronto. —p. 359.

Nature of Hemophilia.—On the basis that thrombokinase is present in the blood of the bleeder in individual cases, even in large amounts without a loss of blood having preceded it, Himmelstjerna asserts that the true nature of hemophilia lies neither in a deficient formation nor in a deficient escape of the thrombokinase, but in an involvement of individual tissues which occurs in attacks, and is characterized by the production of a conserving substance that injures the blood vessels.

Sublingual Administration of Strophanthine.—Tracy reports the case of a man, aged 63, who has been given one-sixtieth grain (1 mg.) of strophanthine sublingually, three or four times a day, for four months, with very good results and no ill effects.

124: 385-452 (Oct. 6) 1926

Important Factors Leading up to Present Conception of Tuberculosis. F. M. Pottenger, Monrovia, Calif.—p. 385.
Cancer: VI. Cancer Literature. W. Meyer, New York.—p. 388.
Fever. G. S. Bel, New Orleans.—p. 390.
Disorders of Rheumatic Group. V. Coates, Bath, England.—p. 393.
Possibilities of Error When Diagnoses are Based Solely on Anamnestic Records. H. J. John, Cleveland.—p. 396.
Gastro-Intestinal Diverticula. W. S. Bainbridge, New York.—p. 397.
Endocrine Glands of Rats in Parabiosis. G. Pighini and M. de Paoli, St. Maurizio, Italy.—p. 399.
Atypical Angina Pectoris. J. Barsky, New York.—p. 404.
Action of Allergic Components in Pathogenesis of Arteriosclerosis and Its Treatment Directed to Cause with Animasa. C. Funck, Köln, Germany.—p. 408.
Placenta Praevia. A. L. McIlroy, London.—p. 411.
Obstetrician. N. Schilling, North Hampton, Iowa.—p. 416.
Pelvic Varicosities. H. Pike, New York.—p. 418.
Retinitis of Pregnancy. C. G. Cumston, Geneva, Switzerland.—p. 420.
Painless Childbirth by Synergistic Method. D. Deutschman, New York. —p. 421.
Midwifery in Homes of People. E. K. le Fleming, Dorset, England. —p. 425.
Publicity Methods in Maternity and Child Welfare. Lord Riddell, London.—p. 426.
Legacy of Greece to Galen: IV. Failure of Nerve. J. Wright, Pleasantville, N. Y.—p. 427.
Toothache Three and Half Centuries Ago. W. R. Riddell, Toronto.—p. 429.

Military Surgeon, Washington, D. C.

59: 273-392 (Sept.) 1926

Chemical Warfare. E. B. Vedder, Edgewood, Md.—p. 273.
Address Before Graduating Class of 1926 Medical Field Service School. H. Brooks, New York.—p. 276.
Influenza. F. G. Crookshank, London.—p. 284.
Baron Larrey, Medical Officer. J. D. Edgar, Portland, Ore.—p. 291.
Thyroid Heart Disease. W. C. Munly, Garden City, N. Y.—p. 308.
Medical Service of Infantry Battalion in Attack. G. B. Denit, Carlisle, Pa.—p. 318.
Medical Service, Walter Reed General Hospital. E. R. Gentry, Washington, D. C.—p. 326.
Cup That Kills. J. W. Meehan, Omaha.—p. 342.
Some Old Medical Officers. H. C. Yarrow, Washington, D. C.—p. 344.
New Antivivisection Bill. H. L. Gilchrist, Washington, D. C.—p. 347.

Minnesota Medicine, St. Paul

9: 489-534 (Sept.) 1926

*Rural Obstetrics: Relation to Puerperal Mortality Statistics. W. A. Piper, Mountain Lake.—p. 489.
Maternal Morbidity and General Practitioner. H. B. Aitkens, Le Sueur Center.—p. 495.
Postpartum Repair of Obstetric Injuries. W. A. Coventry, Duluth.—p. 499.
Ectopic Gestation. R. J. Hodapp, Willmar.—p. 501.
Pathology of Pancreatitis. B. F. Davis, Duluth.—p. 507.
Physiotherapy in Group and Hospital Practice. W. H. Cole, St. Paul.—p. 510.
Branchial Cysts and Fistulae. Five Cases. J. A. Johnson, Minneapolis.—p. 514.
*Results of Schick Test at University of Minnesota. H. S. Diehl, Minneapolis.—p. 518.
Diagnosis and Treatment of Empyema in Home. H. J. Lloyd, Mankato.—p. 521.
Recent Progress in Psychiatry. G. N. Ruhberg, St. Paul.—p. 523.

Rural Obstetrics and Puerperal Mortality.—Piper sent a questionnaire on puerperal and obstetric cases to fifty rural practitioners. The replies represent a total of 42,390 cases with a mortality of 102. Infections occurred in 173 cases; eclampsia in 232 cases. He feels that the physicians who have done years of obstetric work in the rural districts have done it well. Some of their records are enviable. When it has been impossible to follow an elaborate preparation and technic, they have relied on the one resourceful factor of noninterference in the course of labor. Only sixty-six cesarean sections were performed in all these cases.

Schick Tests at Minnesota.—According to Diehl, during the last three years 8,089 Schick tests have been performed on students entering the university. Fifty-two per cent gave positive reactions, indicating susceptibility to diphtheria toxin. The percentage of positive reactions was slightly higher among the boys. The age distribution in this group was small, but there was not the expected decrease in susceptibility among the older ones. There was a slightly greater amount of susceptibility among students from the smaller communities than from the larger.

Missouri State Medical Association Journal, St. Louis

23: 321-354 (Sept.) 1926

*Bleeding Myoma of Uterus. H. S. Crossen, St. Louis.—p. 321.
Treatment of Eclampsia. G. F. Pendleton, Kansas City.—p. 327.
Occipitoposterior Presentation. L. M. Riordan, St. Louis.—p. 329.
Breech Presentations. W. C. Gayler, St. Louis.—p. 331.
Significance of Meconium in Vagina During Labor. F. E. Wilhelm, Kansas City.—p. 333.
*Prenatal Care of Syphilitic Pregnant Woman. T. H. Aschman, Kansas City.—p. 334.

Bleeding Myoma of Uterus.—The treatment of myoma with serious bleeding, Crossen says, varies with the different types of cases. When the myoma originates in the cervix or comes down into the cervix from above, removal may usually be effected under morphine-scopolamine anesthesia with very little disturbance to the patient. However, the manipulation may start severe bleeding, or extensive work may be found necessary to remove the growth. Consequently, efforts at removal and even deep examination should be postponed until the patient is in a hospital or otherwise prepared for any emergency that may develop. A small bleeding myoma of the corpus with the patient in or near the menopause may usually be most satisfactorily handled by radium treatment with diagnostic curettage. A small bleeding myoma of the corpus in a younger woman is preferably taken care of by uterine astringents or curettage, or, if found necessary, by myomectomy when conditions are favorable. In such a case, radium and roentgen-ray irradiation should be avoided because of their serious effect on ovarian function. A large bleeding myoma of the corpus in a patient near the menopause is preferably taken case of by hysterectomy if the patient's general condition will permit. If palliative measures must be employed temporarily, radium treatment with diagnostic curettage is the method of choice. If exceptional conditions make this not practicable, roentgen-ray treatment may be employed. A large bleeding myoma of the corpus in a younger woman should be taken care of by operative removal —myomectomy if practicable, hysterectomy if necessary. Radium and roentgen-ray irradiation are to be avoided if the patient is a young woman because of their destruction of ovarian function.

Prenatal Care of Syphilitic Pregnant Women.—Aschman advocates early and active syphilitic treatment of expectant mothers for the good it can do for the new-born.

Nebraska State Medical Journal, Norfolk

11: 329-368 (Sept.) 1926

Surgical Diabetic. D. F. Jones, Boston.—p. 329.
Cancer of Stomach in Nebraska. J. E. Summers, Omaha.—p. 335.
Some Popular Fallacies About Eyes. S. R. Gifford, Omaha.—p. 337.
Carcinoma of Rectosigmoid in Man of Twenty-One. J. M. Mayhew, C. F. Andrews and G. W. Covey, Lincoln.—p. 340.
Some Essential Elements of Food. H. Davis, Genoa.—p. 343.
Clinical Signs of Rickets in Infancy. F. Clarke, Omaha.—p. 345.
Pathology of Malnutrition. V. E. Levine, Omaha.—p. 349.
General Advice to Expectant Mother. R. Luikart, Omaha.—p. 357.

New Jersey Medical Society Journal, Orange

23: 429-484 (Sept.) 1926

What is Wrong With Workmen's Compensation Laws and What We Can Do to Correct Them. A. F. McBride, Trenton.—p. 429.
Cacoethes Scribendi. R. A. Kilduffe, Atlantic City.—p. 436.
Treatment of Pernicious Anemia. F. M. Allen, Morristown.—p. 437.
Treatment of Some Common Conditions by Physical Measures. W. Martin, Atlantic City.—p. 443.
Acute Appendicitis in Children Terminating Fatally: Seven Cases. F. W. Shafer, Camden.—p. 448.

23: 485-528 (Oct.) 1926

Treatment of Bladder Tumors with Metal Seeds Containing Radium Emanation. E. L. Keyes, New York.—p. 485.
Catheterization. G. T. Spencer, Elizabeth.—p. 488.
Radiation Treatment of Nonmalignant Conditions. G. S. Reitter, East Orange.—p. 489.
Acute Traumatic Abdomen. S. J. Soschin, Newark.—p. 493.
Treatment of Head Injuries. H. Reich, Newark.—p. 497.

New Orleans Medical and Surgical Journal

79: 155-232 (Sept.) 1926

Electrothermic Methods in Treatment of Malignancy. G. E. Ward, Baltimore.—p. 155.
Prostatectomy Under Local Anesthesia. C. W. Allen, New Orleans.—p. 167.
*Ouabain. C. Jamison and P. H. Jones, Jr., New Orleans.—p. 173.
Surgical Procedure in Special Forms of Intestinal Obstruction. I. C. Knox, Vicksburg, Miss.—p. 177.
Real and Alleged Dangers of Prevention and Treatment of Diphtheria with Toxin-Antitoxin and Antitoxin. L. B. Hudson, Hattiesburg, Miss.—p. 185.
Complications of Paranasal Sinus Diseases in Infants and Children. D. C. Montgomery, Greenville, Miss.—p. 195.
Important Facts in Operative Cure of Hernia. H. R. Shands, Jackson, Miss.—p. 198.
Surgery in Diabetics. I. I. Lemann, New Orleans.—p. 203.
Some Problems in Gynecology. B. C. Garrett, Shreveport, La.—p. 210.
Body Surface as Promising Field for Prevention of Disease. R. W. Hall, Jackson, Miss.—p. 214.
*Method for Routine Examination of Feces for Ova of Parasitic Worms and Encysted Amebas. F. M. Johns, New Orleans.—p. 218.

Ouabain.—According to Jamison and Jones, the ouabain of Arnaud is an absolutely safe preparation in doses of from 1/80 to 1/120 grain (0.125 to 0.5 Gm.) given intravenously, not oftener than every twelve, and better, every twenty-four hours, and for four consecutive days only. These injections, however, may be repeated every day for four days, after an interval of several days or a week has elasped. It is a very valuable drug, far superior to digitalis, in the treatment of the heart failure of aortic regurgitation. It is life saving in certain cases of acute cardiac dilatation.

Examination of Feces for Ova.—Johns advocates the centrifugation of watery suspensions of the feces as a quick and reliable method for throwing down the ova of parasitic worms. The centrifugalized preparations show the usual eight to ten time conentration of ova, and two to three time concentration of cysts, and by clearing the specimen of bacteria and other small particles, renders the appearance of cysts much easier of identification with the low magnification of the microscope, thus combining the two examinations. If cysts are present, the further identification of the type by means of the iodine staining of the nuclei is much easier of accomplishment in the washed and concentrated material.

New York State Journal of Medicine, New York

26: 767-806 (Sept. 15) 1926

*Experimental Production of Lung Abscess. S. A. Schlueter, I. F. Weidlein and E. C. Cutler, Cleveland.—p. 767.
Modern Conception of Cataracts. A. J. Bedell, Albany, N. Y.—p. 774.
Relation of Vitamins to Disease. E. M. McCollum, Baltimore.—p. 778.
Appendicitis in Early Life. E. W. Peterson, New York.—p. 781.
Cooperation for Preventing Delinquency. R. P. Truitt, New York.—p. 783.
Periodic Health Examinations. C. S. Prest, New York.—p. 785.

Experimental Lung Abscess.—The experiments made by Schlueter and his associates seem to demonstrate that at least a certain number of postoperative lung abscesses may be due to infected emboli from the operative field. They further strengthen the view that most postoperative pulmonary complications may have a similar etiology. If this is so, the lesson is for the surgeon, not for the anesthetist. Such complications can only be reduced; probably they can never be entirely avoided. Gentle handling of tissues, the most meticulous surgical technic, perfect hemostasis and the greatest asepsis possible under the conditions imposed by the field of operation will surely reduce not only the morbidity from lung abscess but from all other postoperative pulmonary complications.

Northwest Medicine, Seattle

25: 457-514 (Sept.) 1926

Pulmonary Tuberculosis: Treatment by Surgery. H. Lilienthal, New York.—p. 457.
Radiation Treatment of Carcinoma. G. W. Holmes and R. Dresser, Boston.—p. 467.
*Radiotherapy and General Practitioner. A. U. Desjardins, Rochester, Minn.—p. 471.
*Diagnosis of Gallbladder Disease. M. D. Winter, Miles City, Mont.—p. 478.
Cholecystography. J. Aspray, Spokane, Wash.—p. 481.
Surgery of Gallbladder. S. L. Caldbick, Everett, Wash.—p. 483.
Surgery of Gallbladder in Senility. O. F. Lamson, Seattle, Wash.—p. 486.
Diet in Relation to Trachoma. B. F. Royer, New York.—p. 490.
Trachoma: Surgical Treatment. L. W. Fox, Philadelphia.—p. 492.
Glaucoma Symptoms. C. C. Albright, Great Falls, Mont.—p. 496.
*Traumatic Erosion of Cornea from Effects of Ether. H. V. Würdemann, Seattle, Wash.—p. 499.
*Methods of Estimating Hemoglobin. H. D. Haskins and E. E. Osgood, Portland, Ore.—p. 500.

Radiotherapy and General Practitioner.—Desjardins emphasizes the point that adequate radiotherapy requires not only a knowledge of the technical phases of radiology, and of general and special pathology, but also a thorough understanding of their relationship. Such knowledge demands special preparation and cannot be acquired by the mere purchase of a roentgen-ray machine or a bit of radium.

Etiology of Gallbladder Disease.—The various theories of gallbladder function are discussed by Winter, and 100 unselected cases of gallbladder disease are reported. Twenty-seven of the patients were under 35 years of age. Pregnancy was the most frequent predisposing cause. Eleven had had typhoid; six dated the onset of symptoms from influenza.

Erosion of Cornea by Ether.—Würdemann reports two cases of erosion of the cornea resulting from contact with ether. One patient, supposing she was using a zinc collyrium, put the dropper into a collodium bottle. In the second case a history was given of ether having been dropped into the eye at the time of an operation.

Estimation of Hemoglobin.—Eight hemoglobin methods in current use are given critical consideration by Haskins and Osgood, and the Haskins-Sahli method and the Osgood-Haskins colorimeter method are said to be feasible as clinical methods and can be depended on for accuracy. In the case of each, the technic is easy and the standards are permanent and inexpensive.

Ohio State Medical Journal, Columbus

22: 818-912 (Oct.) 1926

Medical Expert in Courts. F. Kennedy, New York.—p. 837.
Diagnosis of Acute Abdominal Lesions. V. A. Dodd, Columbus.—p. 839.
Intraspinous Injections for Optic Atrophy of Syphilitic Origin. W. E. Bruner, Cleveland.—p. 844.
Treatment of Puerperal Sepsis. S. J. Goodman, Columbus.—p. 849.
Psychopathology of Crime Wave. W. Ravine, Cincinnati.—p. 856.
Cincinnati Public Health Federation. J. E. Benjamin, Cincinnati.—p. 859.
*Case of Solitary Tuberculosis Ulcer of Lip. M. D. Shie, Cleveland.—p. 864.

Tuberculous Ulcer of Lip.—In 1919, Shie's patient developed the first lesions of lupus vulgaris. The lesions gradually spread over his nose and a portion of both cheeks, and affected also a small area on the left breast. Under treatment the lesions healed in about two years' time. In 1922, a somewhat similar lesion appeared on the cutaneous surface of the lower lip. About one month later, he noticed a hard nodule on the inner surface of the lip, and the lesion itself began to take on an indolent appearance. In spite of roentgen-ray therapy it slowly increased in size, and a diagnosis of epithelioma of the lip was made by his private physician and by the physicians of the Veterans' Bureau who also examined him. He was sent to the Cleveland Marine Hospital for surgical treatment. A V-shaped piece of tissue was removed, including the ulcerated area with a liberal margin of healthy tissue. The lip was brought together with interrupted plain catgut sutures with silk to the skin and the mucocutaneous border. The histologic examination showed marked chronic inflammation with many typical miliary tubercles of the proliferative type, and no evidence of malignant growths. For more than a year he was free from symptoms. The lupus then recurred over the cheeks and nose and invaded both nares. The disease progressed during 1924 in spite of active radium and roentgen-ray therapy, and caused extensive destruction of the intranasal structures with gross disfigurement of the face. During 1925, however, the condition gradually came under control and at the present time there are no active lesions. At no time was there any recurrence of the lip lesion, and there has never been any evidence of pulmonary disease.

Oklahoma State Medical Association Journal, Muskogee

19: 242-262 (Sept.) 1926

Duodenal Ulcer; Differential Diagnosis. G. A. Wall, Tulsa.—p. 242.
Duodenal Ulcer as Cause of Pain in Right Side: Surgical Treatment. H. Reed, Oklahoma City.—p. 244.
Treatment of Duodenal Ulcer. W. J. Bryan, Jr., Tulsa.—p. 245.
Pyelitis. E. S. Sullivan, Oklahoma City.—p. 247.
Urologic Conditions in Children. H. S. Browne, Tulsa.—p. 249.

Philippine Islands Medical Association Journal, Manila

6: 245-286 (Aug.) 1926

Operative Treatment of Simple Fractures. A. D. Vasquez.—p. 245.
Community Healthmeter. H. Lara and C. A. Ortigas.—p. 261.

Physical Therapeutics, Baltimore

44: 477-540 (Sept.) 1926

True and Pseudo-Angina Pectoris. W. Martin, Atlantic City.—p. 477.
Physiotherapy in Treatment of Arthritis. W. D. McFee, Haverhill, Mass.—p. 485.
Light in Prevention of Rickets. F. H. Humphris, London.—p. 497.
Phototherapy. F. T. Woodbury, New York.—p. 502.
Abdominal Adhesions: Treatment by Electrotherapy. L. H. Levy, New Haven, Conn.—p. 512.

Public Health Journal, Toronto, Canada

17: 421-470 (Sept.) 1926

Nonrelation of Malnutrition in School Children to Infection. H. W. Hill and E. Breeze, Vancouver, B. C.—p. 421.
*Venereal Disease Control in Province of Quebec. A. H. Desloges, Quebec.—p. 433.
Neonatal Mortality. H. MacMurchy, Ottawa.—p. 442.
Rabies in Ontario. C. M. Anderson, Toronto.—p. 448.
Health Teaching in Rural Schools. J. E. Browne.—p. 457.

Venereal Disease Control in Quebec.—Desloges relates the various steps taken in the province of Quebec to control and prevent the spread of venereal diseases, especially syphilis. He is so optimistic about the results of these activities as to say that the day is coming when infection with venereal disease, if not an impossibility, will be a rare event. Further, the campaign against veneral diseases will continue to give the best of results only through the increasing diffusion among the people of knowledge of the consequences of these diseases. Those who are infected must be treated and cured. The others, who are the greatest number, must be convinced of the necessity to unite their efforts to combat in a practical and effective way venereal diseases. In the province of Quebec, the results have been very encouraging. There are now fifty-two treatment centers in the province.

Radiology, St. Paul

7: 185-278 (Sept.) 1926

*Study of Heart Action with Roentgen-Ray Cinematograph. W. E. Chamberlain and W. Dock, San Francisco.—p. 185.
Roentgen-Ray Findings in Cases of Headache. A. Schüller, Vienna.—p. 190.
*Radiographic Diagnosis of Gallbladder Disease. C. S. Oakman, Muncie, Ind.—p. 201.
Study of Scattered and Secondary Radiation in Roentgen-Ray and Radium Laboratories. E. H. Quimby, New York.—p. 211.
Roentgenologic Study of Large Intestine. S. B. Whitlock, Norfolk, Va.—p. 218.
*Intra-Uterine Fetal Death. I. F. Stein and R. A. Arens, Chicago.—p. 227.
Menorrhagia and Metrorrhagia Due to Certain Benign Diseases of Uterus; Treatment by Irradiation. H. H. Bowing, Rochester, Minn.—p. 234.
Radium Treatment of Pathologic Conditions of Tonsil. J. Muir, New York.—p. 242.
Radium Treatment of Epithelioma of Ear. W. H. Kennedy, Indianapolis.—p. 249.
Spontaneous Pneumothorax Apparently Following Whooping Cough. B. A. Rhinehart, Little Rock, Ark.—p. 253.
Relation, Radiographically, of Kilovolts Peak to Time of Exposure. G. W. Files.—p. 255.

Study of Heart Action with Roentgen-Ray Cinematograph.—A method is described by Chamberlain and Dock for analyzing the motions of the heart from films obtained with the roentgen-ray cinematograph of Ruggles. The roentgenocardiograms thus obtained give the following information: The normal left auricle empties early in diastole and shows only very slight motion at auricular systole. At the beginning of diastole, the cephalic half of the normal left ventricular border may move mesad for as much as two-fifteenths second after the apex has begun its diastolic excursion. The caudal 5 cm. of the normal right border moves in phase with the left ventricle. Only about 2 cm. of the cephalic part of the right border moves in phase with the auricle.

Radiographic Diagnosis of Gallbladder Disease.—As a result of the analysis of the indirect signs in seventy cases, Oakman concludes that there is no one indirect sign that occurs in all cases of gallbladder disease or that is surely pathognomonic of gallbladder disease. The major important indirect signs are: hepatofixation of the antrum; displacement of the bulb to the left or downward to the right; definite pressure deformity of the antrum or bulb; distortion of the bulb by adhesions or spasm; fixation of the colon close to the gallbladder; tenderness located in the gallbladder area during fluoroscopic examination, and displacement of the second part of the duodenum to the right.

Diagnosis of Intra-Uterine Fetal Death.—Stein and Arens assert that the roentgenographic diagnosis of intra-uterine fetal death cannot usually be made independent of other clinical data.

Rhode Island Medical Journal, Providence

9: 135-152 (Sept.) 1926

Benign Cervix; Treatment by Cautery. I. H. Noyes and A. Corvese, Providence.—p. 135.
Health of Children in Institution. W. P. Buffum, Jr., and R. C. Bates, Providence.—p. 138.
Arteriosclerosis. C. S. Westcott, Providence.—p. 141.
Vomiting and Abdominal Pain in Neurologic Conditions. H. B. Sanborn, Providence.—p. 145.

South Carolina Medical Association Journal, Greenville

22: 181-200 (Sept.) 1926

Kahn Reaction. F. B. Johnson, Charleston.—p. 183.
Surgical Treatment of Hyperthyroidism. L. G. Guerry, Columbia.—p. 185.
Dementia Praecox. N. M. Owensby, Atlanta, Ga.—p. 190.
Vincent's Angina. P. V. Mikell, Columbia.—p. 194.

Southern Medical Journal, Birmingham, Ala.

19: 657-714 (Sept.) 1926

Passing of Tuberculosis. W. L. Dunn, Asheville, N. C.—p. 657.
*Geographic Considerations in Prevention of Postvaccination Tetanus. W. B. Sharp, Galveston, Texas.—p. 662.
Acrodynia in United States. W. Weston, Columbia, S. C.—p. 665.
*Hydrocephalus Following Intracranial Hemorrhage. A. G. Jacobs, Memphis, Tenn.—p. 669.
*Amebic Dysentery with Liver Abscess and Rupture into Pleura. J. Witherspoon, Nashville, Tenn.—p. 673.
Total Transposition of Viscera and Dextrocardia. M. H. Prosperi, Washington, D. C.—p. 676.
*Melanotic Moles. C. F. Lehmann, San Antonio, Texas.—p. 678.
Development of Midwifery in Mississippi. F. J. Underwood, Jackson, Miss.—p. 683.
County Health Work in Georgia. M. A. Fort, Bainbridge, Ga.—p. 685.
Fractures, Epiphyseal Separations and Dislocations: Résumé of 1,114 Cases. E. T. Newell, Chattanooga, Tenn.—p. 688.
Extension and Suspension in Fractures of Long Bones. A. P. Howard, Houston, Texas.—p. 690.
Splint for Colles' Fracture Permitting Mobilization of Wrist Joint. J. C. Burch, Nashville, Tenn.—p. 691.
Fractures of Long Bones of Lower Extremities. R. W. Knox, Houston, Texas.—p. 692.
Kangaroo Tendon Suspension of Uterus. D. H. Doherty, Selma, Ala.—p. 696.
Premonitory Sign of Labor. G. E. Thompson, Inman, S. C.—p. 699.
Rural Emergency Hospital. R. T. Davis, Warsaw, Va.—p. 699.
Dependable Labor Necessary to Profitable Industry. J. P. Bowdoin, Adairsville, Ga.—p. 700.
Congenital Occlusion of Posterior Nares: Case. V. K. Hart, Statesville, N. C.—p. 703.
Correlation Between Laboratory and Clinical Subjects. R. H. Oppenheimer, Emory University, Ga.—p. 704.
Encouragement of Research by Medical Students. J. H. Musser, New Orleans.—p. 705.

Postvaccination Tetanus.—Soil contamination of vaccination lesions led, in an instance cited by Sharp, to seven cases of tetanus. The patients were children and most probably contaminated their own vaccination lesions, all of which had ulcerated or run otherwise abnormal courses. The general incidence of tetanus where this occurred is high. Sharp insists that in localities where the tetanus hazard is considerable, vaccination cases developing ulcers, abscesses or other abnormal sores at the site of inoculation should be afforded antitetanic prophylaxis.

Hydrocephalus Following Intracranial Birth Hemorrhage.—Jacobs reports a case of hydrocephalus resulting directly from an intracranial birth hemorrhage. The underlying pathologic condition was demonstrated at operation. On the fifth day after birth, the child became cyanotic, cold and clammy and had convulsive twitchings of the right arm, leg and right side of the face, while at the same time there was no distention of the fontanels. Spinal puncture revealed a bloody fluid under slight pressure, which proves that there was an infratentorial hemorrhage. Transfusion of whole blood stopped the hemorrhage, which points to hemorrhagic diathesis as a contributing factor. The appearance of hydrocephalus shortly thereafter gave rise to the belief that there must be an obstruction to the outflow of fluid, with which the hemorrhage must in some way be connected. The symptoms present during the birth hemorrhage, and the results seen on lumbar puncture, pointed to infratentorial hemorrhage. Entrance was made where indicated, and adhesions were found beneath the tentorium, obstructing the foramina.

Tropical Abscess of Liver in Tennessean.—Witherspoon reports the case of a man, a native of Tennessee, who died as the result of a tropical abscess of the liver.

Melanotic Moles.—Lehmann reports twelve cases of melanotic mole, one of them a classic case of bathing trunk nevus. Another case showed an odd evolution and involution of metastatic melanomas. It is stated that the amount of melanin is no measure of the degree of malignancy. Five of seven patients with malignant melanomas showing some or

all the histologic points given by Ewing died or became incapacitated within two and one-half years from the onset of malignancy. One of the seven was not heard from. The other one lived eight years. Removal of an actively growing melanotic tumor of the skin, if not too deep, can be successfully accomplished by cautery excision, or electrocoagulation followed by irradiation. A growing melanoma which was removed by cautery and not followed by irradiation was not cured.

Texas State Journal of Medicine, Fort Worth

22: 303-360 (Sept.) 1926

Treatment of Diabetes Mellitus; Cases. C. F. Brown, Dallas.—p. 316.
Diagnostic Value of Glucose Tolerance Test. H. L. Wilder, Clarendon, Texas.—p. 319.
Practical Adjustment of Insulin Dosage: I. I. Leman, New Orleans. —p. 322.
Tonometric Measurements, Essential Part of Routine Eye Examinations. H. C. Haden, Houston.—p. 326.
Malignancy in Eye, Ear, Nose and Throat Clinics. O. M. Marchman, Dallas.—p. 330.
Osteochondritis of Metatarsophalangeal Articulation. S. D. David, Houston.—p. 332.
Surgical Treatment in Selected Cases of Pulmonary Tuberculosis. H. Reed, Oklahoma City.—p. 334.
Staphylococcus Infections of Face and Lips. W. L. Hudson, Dallas. —p. 337.
Equilibrium of Epidemic Diseases. L. H. Martin, Fort Worth.—p. 341.
Decision, Its Significance for Mental Health. H. H. House, College Station.—p. 344.
Basic Principles of Physical Therapy. J. W. Torbett, Marlin.—p. 347.
Fractional Roentgen-Ray Dosage in Treatment of Acne. T. B. Bond, Fort Worth.—p. 350.

United States Veterans' Bureau Medical Bulletin, Washington, D. C.

2: 825-920 (Sept.) 1926

*Use of Tuberculin in Diagnosis. L. V. Hamman, Baltimore.—p. 825.
*Teaching Tuberculosis to Tuberculous. E. Morris, San Fernando, Calif. —p. 829.
*Personal Touch in Hospital Treatment of Tuberculous. I. D. Loewy, Whipple, Ariz.—p. 832.
*Parkinsonian States of Infectious Origin. R. J. Beck, Richmond, Va. —p. 835.
Care and Treatment of Drug Addicts. E. M. Connely, Algiers, La.—p. 844.
Epilepsy. R. C. Robertson, Kansas City, Mo.—p. 849.
Sinusoidal Current as Agent in Relief of Constipation. C. G. Beckett, Gulfport, Miss.—p. 854.
*Kottmann Test. P. A. Shinn, Northampton, Mass.—p. 857.
Dental Foci of Infection. W. W. Marr, Washington, D. C.—p. 866
Terminal Case of Rocky Mountain Spotted Fever. R. E. Baker, Portland, Ore.—p. 868.
Osteitis Deformans (Paget's Disease). P. C. Christian, Legion, Texas. —p. 874.

Value of Tuberculin Test.—The subcutaneous tuberculin test, in Hamman's opinion, is the most reliable method we possess to exclude the presence of tuberculous disease. However, the intracutaneous test closely approaches it in accuracy and, since it is much simpler, should be preferred as the routine or usual method. Occasionally confirmation by a negative subcutaneous test may be desired.

Teaching Tuberculosis to Tuberculous.—Morris stresses the educational function of tuberculosis hospitals as being the fundamental force by which the tuberculous can be led through all the vicissitudes so characteristic of the disease. This includes education of the family as well as of the patient. A modern tuberculosis hospital does two things: It increases the chances of the sick to get well and decreases the chances of the well to get sick.

Treatment of Tuberculosis.—Loewy emphasizes the need of proper approach and advice to the patient. Personal interest of the physician plus a cooperative patient equals good results in treatment.

Parkinsonian States of Infectious Origin.—Beck reports six cases of this sort and besides removal of the infection focus he recommends massage and passive motion followed by active voluntary movements.

Value of Kottmann Test.—The Kottmann test was done by Shinn on the blood of forty-one unselected neuropsychiatric patients in an attempt to determine the value of this test as an index of the degree of hyperthyroidism and to compare the results with those of the basal metabolism determinations. The results show that the test closely parallels both the basal metabolism determinations and the clinical symptoms. One patient who showed a considerable increase in the Kottmann time, an increased basal metabolic rate, and severe symptoms of hyperthyroidism underwent ligation of the superior thyroid arteries. Fifteen days after the operation all three of these factors had approached normal.

Virginia Medical Monthly, Richmond

53: 347-418 (Sept.) 1926

Theories Underlying Treatment of Malignancy as Applied to Gynecology. C. R. Robins, Richmond.—p. 347.
Etiology of Appendicitis. E. L. Lawrence, Roanoke.—p. 349.
Preoperative and Postoperative Medical Treatment of Appendicitis. J. D. Willis, Roanoke.—p. 350.
Surgical Treatment of Appendicitis. N. H. Copenhaver, Bristol, Tenn.-Va.—p. 351.
*Carcinoma of Pancreas. W. H. Higgins, Richmond.—p. 355.
Common Eye Conditions Seen by General Practitioner. C. A. Young, Roanoke.—p. 357.
Bacillary Dysentery. O. O. Ashworth and A. H. Straus, Richmond. —p. 359.
*Prolonged Retained Placenta. M. P. Rucker, Richmond.—p. 362.
Diagnosis of Duodenopyloric Ulcers. W. W. Insley, Christiansburg.—p. 367.
Relationship Between Orthodontist and Otorhinologist. W. B. Massey, Richmond.—p. 368.
Dystrophy of Endocrine Glands in Relation to Eyes. R. S. Lamb, Washington, D. C.—p. 370.
Feeding Normal Infant During First Year. T. D. Jones, Richmond. —p. 372.
Nonoperative Treatment of Chronic Suppurative Otitis Media. J. R. Gorman, Lynchburg.—p. 378.
*Use of Alcohol in Medicine. C. Willcox, Washington, D. C.—p. 382.
Why Standardize Hospital? P. W. Boyd, Winchester.—p. 387.
Sudden Death. W. B. Blanton, Richmond.—p. 390.
Mercurial Poisoning from Local Applications of Mercurial Ointment. C. H. Lupton, Norfolk.—p. 395.
Nasal Accessory Sinuses. G. M. Maxwell, Roanoke.—p. 396.

Carcinoma of Pancreas.—Fourteen cases of carcinoma of the pancreas are analyzed by Higgins. The average age of the patients was 62, and the average duration of symptoms was six months. The sex incidence was the same in the two. The chief symptoms were pain in the epigastrium and back, jaundice, weakness and rapid loss of weight. The pain and gastric disturbances were not influenced by food or alkalis. Constipation was a frequent symptom, and, contrary to the usual textbook description, loose pancreatic stools were seldom found. Roentgen-ray studies were of little value, and laboratory tests were of only limited assistance in recognizing this disease.

Prolonged Retention of Placenta.—From a search of the literature and from personal inquiry it would seem to Rucker that the frequency of prolonged retention of the placenta varies in different places. In many large obstetric clinics there have been no cases of retention of a portion of the placenta for a month or more. Of the other hand, some men have seen as many as fifteen or twenty cases. Curettage is very frequently an etiologic factor. Hemorrhage is the chief and often the only symptom. Some cases show evidences of toxemia, and some times there are no symptoms whatever. The outcome varies. There may be spontaneous expulsion, apparent absorption, the formation of polyps that may simulate submucous fibroids, carcinoma of the body of the uterus, or death from sepsis.

Use of Alcohol in Medicine.—The greatest value of alcohol, Willcox asserts, lies in its hypnotic and psychologic effect. Nothing can replace it in relieving the worry, distress and anxiety of the patient, and in giving him that feeling of repose and well being that plays so vital a part in helping him over a crisis, or in rendering a case of helpless suffering more bearable.

West Virginia Medical Journal, Charleston

22: 449-504 (Sept.) 1926

How a Full-Time Health Unit is Beneficial to Practice of Medicine. J. Thames, Kingwood.—p. 449.
Hand Injuries and Infections. R. H. Walker, Charleston.—p. 456.
Radium Therapy. C. J. Broeman, Cincinnati.—p. 460.
Antitubercular Vaccination. A. Calmette, Paris.—p. 467.
Roentgen-Ray Therapy in Diseases of Skin. H. T. Phillips, Wheeling. —p. 473.
Diagnosis and Treatment of Laryngeal Tuberculosis. E. A. Looper, Baltimore.—p. 476.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Medical Psychology, London

6: 85-156 (Sept. 2) 1926

Biologic Point of View of Adolf Meyer in Psychology and Psychiatry. H. Flournoy.—p. 85.
Divergent Tendencies in Psychotherapy. J. Glover.—p. 93.
Interrelation Between Bodily and Mental Disease. N. H. M. Burke.—p. 110.

British Medical Journal, London

2: 409-468 (Sept. 4) 1926

Place of Anatomy in Medicine. A. Keith.—p. 409.
Educational Number, Session 1926-1927.—p. 411.

2: 469-512 (Sept. 11) 1926

*Coincident Duodenal and Gastric Ulcer. D. P. D. Wilkie.—p. 469.
*Man as Intermediate Host of Taenia Solium. E. J. H. Roth.—p. 470.
*Case of Extensive Somatic Dissemination of Cysticercus Cellulosae in Man. R. Priest.—p. 471.
Physical and Mental Effects of Monotony in Modern Industry. A. H. Davies.—p. 472.
Physical and Mental Effects of Fatigue in Modern Industry. I. W. L. Hichens.—p. 479.
Id.: II. H. M. Vernon.—p. 480.
Scoliosis Due to Unilateral Muscle Spasm. P. J. Verrall.—p. 481.
*Recovery After Intracardiac Injection of Ether. N. H. Bolton.—p. 482.

Coincident Duodenal and Gastric Ulcer.—Among 490 bodies examined by Wilkie for duodenal ulcer, one or more duodenal ulcers were found in forty-one, or 8 per cent. In five cases, 12 per cent, one or more gastric ulcers were present along with the duodenal ulcers. Among 300 cases of ulcer in which Wilkie operated, there were 221 cases of duodenal ulcer alone, thirty-seven cases of gastric ulcer alone, and forty-two cases of coincident duodenal and gastric ulcer. In 16 per cent of duodenal ulcer cases, there was present a gastric ulcer as well; and in 53 per cent of cases with gastric ulcer, one or more duodenal ulcers were found. If the cases of coincident gastric and duodenal ulcer are excluded, duodenal ulcer was exactly six times as frequent as gastric ulcer. In the male subject, the proportion of duodenal to gastric ulcer was 9 to 1, in the female 2.7 to 1. If all ulcer cases are included, the proportion of duodenal to gastric ulcer is 3.3 to 1. In the male sex it is 4.4 to 1, in the female sex 2 to 1. Wilkie says that, given the factors predisposing to ulceration, the probable site of ulcer will be the first part of the duodenum and after this the lesser curvature of the stomach. As for treatment, Wilkie says that two groups of cases are to be distinguished when considering operative measures: (*a*) active ulcers without stenosis in relatively young people (below 50); (*b*) unhealed but cicatrized ulcers with stenosis in elderly subjects. The Balfour operation is recommended for the first group. Purely anastomotic operations are said to give an enduring symptomatic cure in the second group.

Man as Intermediate Host of Tapeworm.—Roth relates the case of a man who had a discharging sinus in the left knee-joint, and "fits" of epileptiform type at approximately monthly intervals. The man had resided in India for three years, but there was no history of infection by intestinal parasites. Roentgenograms showed scattered throughout the muscles around the knee-joint some eighty opaque, ovoid, disklike bodies which were doubtless in the nature of calcifications. A similar condition existed in nearly every other part of the body, but with the main grouping of the calcifications in the extremities, as far down as the ankles and the wrists. The pectoral group of muscles on each side contained a large number, and they were also found in the muscles of the neck and in the deep muscles around the vertebral column. The lungs were apparently unaffected, and no abnormality could be detected in the heart shadow. None were located in the liver substance. Three, at least, of the bodies were seen to be lying in the pia mater of the brain, one of which was localized in the middle of the motor area on the left side. Under a low objective, the majority of the section of a nodule was seen to consist of degenerated keratinous material, surrounded by a fibrous capsule in intimate association with the muscle substance in which it was embedded. Under a higher power of magnification, this was found to consist of what was doubtless a cestode head with its four suckers and its hooklets, representing in every respect the degenerated scolex of *Taenia solium*. Therefore, it is quite evident that the symptoms manifested by this man were caused by infection by the *Cysticercus cellulosae* stage of *Taenia solium*, of which he happened to be the intermediate host.

Extensive Dissemination of Cysticercus.—The patient whose case is cited by Priest complained of abdominal pain, vomiting and fever. The liver was enlarged considerably, and later the man had severe pain in the muscles of the calf. The muscles on contraction appeared nodular; certain nodules beneath the skin of the forehead and in the gastrocnemii were noted also. There was no edema, and the urine was normal. There was eosinophilia up to 4 per cent. Following examination, the patient had a "fit" during which the pulse was irregular and the rate rose to 120. Nodules were found in the subcutaneous tissues of the forehead and scalp, beneath the left eye, in the neck, in the tissues of the cheek, and in the aponeuroses of the abdomen, elbow-joints, thighs and legs. In the muscles, they could be felt singly, in groups and in chains. One cyst was present in the left eye. Two cysts were removed for microscopic examination showing at one point a darker area about the size of a pin's head. They contained a clear fluid and the dark spot or area proved to be an invaginated single scolex of the intermediate form of *Taenia solium*.

Intracardiac Injection of Ether Causes Recovery.—Bolton reports two cases. In one case the heart stopped beating in the course of a herniotomy; in the other case, during labor. In each case artificial respiration and subcutaneous medication were ineffective, but the injection of 1 cc. of ether directly into the left ventricle was quickly followed by a return of the heart beat.

2: 513-548 (Sept. 18) 1926

Relation of Streptococci to Scarlet Fever and Its Complications: I. R. A. O'Brien.—p. 513.
Id.: II. C. C. Okell.—p. 515.
Id.: III. K. E. Birkhaug.—p. 516.
*Place of Induction of Premature Labor in Treatment of Contracted Pelvis. J. B. Banister.—p. 519.
*Filled Dead Tooth as Source of Streptococcal Blood Infection. A. P. Bertwistle.—p. 523.
*Case of Diffuse Tarsitis. E. N. Hughes.—p. 524.
*Overdose in Spinal Analgesia. M. Sourasky.—p. 524.
*Diffuse Adenocarcinoma of Colon. E. V. Phillips and J. S. Macbeth. —p. 524.
*Epinephrine in Cardiac Arrest. J. S. O'Donovan and T. D. FitzPatrick. —p. 524.
*Primary Abdominal Torsion of Great Omentum. J. Riddel.—p. 525.
*Influenza Antigen in Treatment of Lethargic Encephalitis. J. R. Keith. —p. 525.
Strangulated Inguinal Hernia in Infant Sixteen Days Old. G. H. Buckley.—p. 525.

Induction of Premature Labor in Contracted Pelvis.—Banister believes that the wider use of induction of labor in cases of contracted pelvis should be urged, and that this is especially necessary today in view of the widespread employment of cesarean section. It is simple, safe, and unaccompanied by untoward complications and sequelae. However, premature induction of labor is not to be decided on lightly, but should be dependent on very careful investigation and frequent examination. It affords the only actual test of the power of a given uterus under conditions which imply a reasonable chance of the survival of the baby. And finally, this must be regarded as an attempt to procure what is rightly regarded as the highest aim of the true obstetrician—a natural parturition.

Filled Dead Tooth Source of Septicemia.—Bertwistle reports a case which shows that it is the filled dead tooth which has not had its root treated, in otherwise healthy mouths, which is oftenest the nidus of a focal infection and the source of constitutional symptoms.

Diffuse Tarsitis.—Hughes records a case of diffuse inflammation involving the whole of a tarsal plate but confined to the plate, as a result of a primary infection in a meibomian gland.

Overdose in Spinal Anesthesia.—In the two cases cited by Sourasky, a double dose of the anesthetic injected, owing to a misapprehension, into the spinal theca produced severe shock with retching, vomiting and a marked fall in the blood pressure, and temporary, but complete paralysis of the blad-

der center in the cord, resulting in retention of urine with overflow and partial paralysis of the rectal sphincter, causing incontinence of feces.

Diffuse Adenocarcinoma of Colon.—Phillips and Macbeth relate a case of diffuse adenocarcinomatous infiltration of the mucous and submucous coats of the colon from the cecum to the rectum. The only action taken was a lateral anastomosis of the lower end of the ileum with the pelvic colon, with the idea of obviating the inevitable obstruction which must occur were nothing done.

Epinephrine in Cardiac Arrest.—A boy suffering from a Colles fracture was given an anesthetic. When the fracture was set, and fully a minute after ceasing to administer the anesthetic, the boy ceased breathing and the heart stopped beating. Artificial respiration was without result. O'Donovan and FitzPatrick injected about 0.5 cc. of 1:1,000 epinephrine hydrochloride solution into the heart, and in fifteen seconds it was beating again. The boy was apparently dead for at least sixty seconds.

Primary Abdominal Torsion of Omentum.—In Riddel's case, an indefinite mass was palpable to the right of the umbilicus, and was regarded as an inflamed appendix wrapped up in omentum. A diagnosis of subacute appendicitis was made, and operation performed. The appendix was healthy. On sweeping the index finger upward a mass was encountered, and a piece of omentum, purplish-red, was drawn out. The mass was about the size of a green fig, and was undergoing red infarction. It arose from the right-hand edge of the omentum, and lay in close relationship to the hepatic flexure of the colon. The mass was readily isolated, a twisted pedicle defined and ligatured, and the necrotic tissue cut away. Recovery was uneventful. No cause was assignable to account for the torsion of the omentum.

Influenza Antigen in Epidemic Encephalitis.—Keith reports two cases of epidemic encephalitis in which hypodermic injection of pure influenza antigen was followed by complete recovery.

Journal of Hygiene, London

25: 227-353 (Aug.) 1926

*Cancer and Race in British Guiana. J. F. C. Haslam.—p. 227.
Mendelian Variation in Paracolon Mutabile Colon Group and Application of Mendel's Principles to Theory of Acquired Virulence. F. H. Stewart.—p. 237.
Longevity of Males at Different Periods in History of Great Britain and Ireland from Sixteenth to Beginning of Nineteenth Century. M. Young and W. T. Russell.—p. 256.
*Pasteurization of Milk: Efficiency of Commercial Pasteurization. H. Jenkins.—p. 273.
Radiation Integrator in Vacuo, Instrument for Study of Radiant Heat Received from Sun. P. A. Buxton.—p. 285.
*Physique and Mentality of Elementary School Children. E. G. Habakkuk.—p. 295.
Experimental Tuberculosis in Mice: Susceptibility of Mice to Inoculation with Tubercle Bacilli. C. H. Browning and R. Gulbransen.—p. 323.
Nature of Factor Inhibiting Fermentation of Sugar in Mutabile and Paracolon Forms of Bacillus Neapolitanus Emmerich. F. H. Stewart.—p. 333.
Mechanisms by Which Protection Against Infectious Disease is Acquired in "Natural" Epidemics. M. Greenwood, E. M. Newbold, W. W. C. Topley and J. Wilson.—p. 336.

Cancer and Race in British Guiana.—Although the results of Haslam's inquiry are not regarded as conclusive, there appears to be a prima facie case for the opinion that there is a racial difference as to cancer mortality between the East Indians and blacks in British Guiana.

Efficacy of Commercial Pasteurization of Milk.—Jenkins asserts that commercial pasteurization is apparently effective in eliminating any tubercle bacilli that may be present in milk; but, while decreasing the total bacterial and *B. coli* content to a considerable extent, it does not supply as satisfactory a grade of milk, from the bacteriologic standpoint, as certified and grade A milks, which usually show a much lower bacterial content than the commercially pasteurized milk.

Physique and Mentality of School Children.—Habakkuk avers that the best children mentally are the best physically. These facts point to mentality and physique being controlled by a common factor; and it is suggested that this factor is what is known as "nutrition." An improvement in the nutritional status of children would not only result in improved physique, but would also provide more favorable conditions for their mental development, for education appears to be most beneficial to those who are best nourished.

Journal of Laryngology and Otology, Edinburgh

41: 493-564 (Aug.) 1926

Hemorrhagic Types of Ear Disease Occurring During Epidemics of Influenza. W. Milligan.—p. 493.
Gradenigo's Syndrome. H. G. Estcourt.—p. 499.
Surgical Approach to Ethmoidal Cell System. J. B. Horgan.—p. 510.
Acute Middle Ear Suppuration: Gradenigo Syndrome: Operation: Recovery. W. T. Gardiner.—p. 522.
Acute Suppurative Otitis Media: Gradenigo Syndrome: Acute Leptomeningitis: Death. G. E. Martin.—p. 525.

41: 565-636 (Sept.) 1926

Functional Test of Hearing in Otosclerosis. C. C. Bunch.—p. 565.
Atrophic Rhinitis. W. M. Mollison.—p. 585.
Zinc Wires and Needles for Ionization and Electrolysis. F. H. B. Norrie.—p. 599.
*New Method of Ligating Tonsillar Vessels. O. Popper.—p. 601.
*Cerebellar Cyst: Operation; Recovery. E. Watson-Williams.—p. 603.

Ligating Tonsillar Vessels.—Popper has devised specially constructed forceps which are used as a ligature carrier when a vessel in the tonsillar fossa needs to be ligated.

Cyst of Cerebellum.—This patient complained of pain on the right side of the head, especially about 1 inch behind the mastoid process. There was marked deafness in the right ear and right facial paresis; the ear had never ached or discharged. Watson-Williams made a diagnosis of a very slow growing acoustic nerve tumor. The history and the Wassermann reaction for blood and cerebrospinal fluid were negative for syphilis although recurrent attacks from which the man suffered were typical of gumma. The last three attacks came on in three successive months, each attack worse than the preceding one, and a fresh symptom appeared with each attack, vertigo, intractable vomiting, and finally ophthalmoplegia and papilledema. But the most curious point was the complete absence, until after operation, of any discoverable incoordination. The man improved steadily, and was almost well when, without warning, he had sudden profuse vomiting during the morning, followed by great vertigo. When examined in bed, he lay on the left side, and complained of severe headache all over the head. There was coarse nystagmus to the right, in all positions of the head and eyes. No past-pointing occurred either with the eyes open or shut; no loss of coordination, and no dysdiadokokinesia. After this attack he improved and was up and about, though not free from some vertigo. Then he began to suffer from very bad headache. The headache was "bursting" and general, but worse on the right side, and toothache was felt on the same side. A sudden attack of vomiting relieved him for a time, but was succeeded by marked vertigo, nystagmus, etc., and the pain soon returned. Instead of getting better he became steadily worse. The Wassermann reaction was again found negative both in the blood and cerebrospinal fluid. A course of antisyphilitic treatment had done no good. A decompression was made and the patient became better for a while; then recurring symptoms called for a second operation. On the outer surface of the right lateral lobe, a cyst as large as a pigeon's egg was found. It contained a drachm (4 cc.) or more of clear colorless fluid. No definite lining membrane was made out; a free opening was made, but it was thought advisable not to attempt to remove the whole cyst, especially as the inner end seemed to run into the peduncle. The wound was closed. Recovery ensued and the man feels very well.

Journal of Oriental Medicine, Dairen, South Manchuria

5: 15-26 (Aug.) 1926

Correlation Between Pathologic Growth of Tissue of Different Character: II. Inflammatory Tissue and Implantation of Chondroma of Fowl. H. Kubo.—p. 15.
Intensity of Sun's Rays in Dairen. J. Murakami and H. Nishida.—p. 17.
Amount of Blood Supply and Oxygen Consumption of Brain. C. L. Hou.—p. 20.
*New Liver Function Test. S. Ishikawa.—p. 22.
*Blood Cholesterin in Smallpox. S. Nishigishi.—p. 24.
Case of Elephantiasis Congenita Lymphangiectatica. Y. Norioka.—p. 25.

Liver Function Test.—Following the ingestion of santonin, a reddish substance is excreted in the urine. Ishikawa

believes that this substance is the product of the action of the liver on the santonin, and hence may be regarded as evidence of liver function. He was able to prove the correctness of this assumption clinically and experimentally. Therefore, the author's liver function test resolves itself into the intravenous injection of 0.5 cc. of 10 per cent solution of santonin sodium, and examining urine fractions every three to five minutes for the color indicating santonin.

Blood Cholesterin in Smallpox.—In forty cases of smallpox examined by Nishigishi the blood cholesterin was increased in amount and, apparently, suddenly. Regardless of other symptoms, this increase continued reaching the high point during the period of scar formation. Then a steady fall occurred.

Journal of State Medicine, London

34: 497-558 (Sept.) 1926

Human Tuberculosis of Bovine Origin. W. G. Savage.—p. 497.
*Oral Sepsis in Relation to Rheumatic Disease. C. P. Ball.—p. 508.
Incidence and Prevention of Venereal Disease in Royal Navy. P. F. Alderson.—p. 525.
Production and Distribution of Grade A (Tuberculin Tested) Milk. C. Maddock.—p. 537.
Standard of Public Health of British Isles, as Revealed by Navy Personnel. R. J. Mackeown.—p. 545.

Oral Sepsis in Relation to Rheumatic Disease.—Ball concludes his discussion of this subject as follows: If we agree as to the great bearing oral sepsis has on systemic disease in general and on rheumatic disease in particular, then the time has come when medicine and dentistry should combine together. Possibly, in the future, dentistry will be more readily recognized as a specialty in medicine, and the dental specialist will take his place with others specializing in various ailments, for surely a clean mouth is just as important as a healthy and clean stomach, bowel or bladder.

Lancet, London

2: 481-530 (Sept. 4) 1926

Psychoses and Psychoneuroses Contrasted from Psychologic Point of View. H. Yellowlees.—p. 481.
*Etiology of Impetigo Contagiosa. A. R. Balmain.—p. 484.
*Operation for Creating Abdominal "Shelf" in Certain Cases of Visceroptosis in Women. V. Bonney.—p. 487.
Hay-Fever. F. G. Chandler.—p. 489.
*Posterior Gastrojejunostomy. D. MacLeod.—p. 490.
*Cardiac Circulation and Disease. G. Bourne.—p. 491.
Splenectomy in Purpura Hemorrhagica: Two Cases. A. W. Falconer and A. R. McLachlan.—p. 493.
*Amebic Dysentery Contracted in England. A. S. Simpson.—p. 495.

Etiology of Impetigo Contagiosa.—In a series of fifty-six cases examined by Balmain, streptococci were found forty-three times (thirteen times in pure culture); staphylococci were found fifty-two times (twenty-one times in pure culture), and diphtheroids were found three times (once in pure culture). Human experiments prove that the streptococcus will produce typical lesions of impetigo contagiosa. It is considered that the most suitable treatment for impetigo contagiosa, for both removal of the crusts and the healing of the lesion, is with acriflavine, 1:1,000, in paraffin emulsion.

Creating Abdominal Shelf in Visceroptosis.—In selected cases Bonney fixes the uterus and broad ligaments in such a way as to form a complete barrier across the front part of the lower abdomen, thus separating the uterovesical pouch from the general peritoneal cavity. The operation is, in effect, a combination of the operations of direct ventrifixation and round ligament shortening.

Posterior Gastrojejunostomy.—On the basis of anatomy and mechanical factors, MacLeod suggests a method of posterior gastrojejunostomy; i. e., to open into the lesser sac through the transverse mesocolon to the left of the middle line, and stretch this opening in all directions—particularly upward and backward to the commencement of the jejunum, and downward as far as the arch of the left branch of the middle colic artery. Then a point is noted on the posterior wall of the stomach which lies in relation to the jejunal entry, and a clamp is applied to that part of the stomach lying between this point and its lowest part, the stomach having been pulled out through the mesocolic opening. An equal length of proximal jejunum is clamped and the two viscera are placed in position for anastomosis. Not infrequently the first inch or more of the jejunum is attached to the under surface of the mesocolon by a triangular membrane varying in breadth, and this must be divided before the clamp is put on. It is very important that the edges of the opening in the mesocolon be sutured to the stomach wall after the anastomosis is completed, because, apart from anything else, when the clamps are removed the stomach readjusts itself and recedes into the lesser sac, and if its lowest part lies to the right of the midcolic artery, it will drag a part of the bowel lying just distal to the anastomosis with it, and kinking will ensue owing to its being slung over the right edge of the mesocolic opening in which runs the artery.

Cardiac Circulation and Disease.—The cardiac circulation is an inversion, as regards rhythm, of the systemic circulation, as stated first by Thobesius in 1709. It is directly dependent on the height and duration of the intra-aortic pressure during diastole. Any change in the latter is immediately reflected in the cardiac circulation. Aortic regurgitation starves the muscle of blood. The cardiac circulation may possibly be influenced by loss of aortic elasticity. Tachycardia above an unknown rate must inevitably impair the cardiac circulation, though this might be to some extent compensated by a raised diastolic pressure.. In assessing any cardiac or cardiovascular lesion, it is logical to consider separately its possible effect on the cardiac circulation. In attempting to devise fresh methods of treatment in cardiac failure or disease, Bourne says that the virtues of bradycardia as a definite end to be sought should be kept in mind.

Amebic Dysentery Contracted in England.—Simpson records a case of amebic dysentery with a subsequent liver abscess in a man who had never been outside England.

Practitioner, London

117: 137-204 (Sept.) 1926

*Nasal Sinusitis as Cause of Toxemia. W. Willcox.—p. 137.
Surgical Treatment of Goiter: Exophthalmic Goiter. L. E. C. Norbury.—p. 147.
Research in General Practice. M. Forrester-Brown.—p. 163.
*Vertebral Arthritis. H. Higgins.—p. 173.
*Bronchiectasis. L. S. T. Burrell.—p. 183.
*Pulmonary Tuberculosis in Workers. A. E. Rouse.—p. 194.
Case of Total Laryngectomy, with Successful Use of Tapia's Artificial Larynx. H. A. Cowan.—p. 196.

Nasal Sinusitis as Cause of Toxemia.—Willcox urges that, as nasal sinusitis is relatively common, it should always be suspected and searched for in cases of toxemia of all kinds when the cause is not apparent.

Diagnosis of Vertebral Arthritis.—The points for diagnosis in vertebral arthritis, according to Higgins, should include evidence of intravertebral compression, lymphatic obstruction, muscular spasm and atrophy, with carefully localized tender spots.

Treatment of Bronchiectasis.—Simple treatment, consisting of draining the cavities by posture, and the administration of creosote by the mouth or by inhalation, Burrell avers, is often sufficient to cure even bad cases of bronchiectasis, especially in children, and early cases. Artificial pneumothorax, aspiration and lavage of the diseased part through the bronchoscope have proved successful in skilled hands. Failing success by one of the foregoing methods, there remains treatment by some more serious surgical procedure.

Prevention of Pulmonary Tuberculosis.—Rouse contends that the wearing of a proper respirator, by all the workers in trades in which the inhalation of dust is of every-day occurrence, should be compulsory, and would greatly tend to lessen the number of victims of pulmonary tuberculosis.

Quarterly Journal of Experimental Physiology, London

16: 195-299 (Aug.) 1926

*Effect on Stomach of Section of Vagi Nerves. E. D. M'Crea, B. A. M'Swiney and J. S. B. Stopford.—p. 195.
*Arneth Count. I. Relation Between Phagocytosis and Nuclear Configuration. E. Ponder and Z. M. Flinn.—p. 207.
*Id. II. Relation of Nuclear Configuration to Nuclear Area. E. Ponder.—p. 221.

*Id. III. Effect of Thyroidectomy. E. Ponder and K. N. Flint.—p. 225.
*Id. IV. Deflection of Count by Thyroid Injections. E. Ponder.—p. 227.
Id. V. Steady State. E. Ponder.—p. 241.
*Action of Extracts of Posterior Lobe of Pituitary on Pulmonary Circulation. E. Sharpey-Schafer and A. D. MacDonald.—p. 251.
*Reproduction and Diet in Rat. W. P. Kennedy.—p. 281.
*Nervous Control of Respiration. R. J. S M'Dowall.—p. 291.

Effect on Stomach of Section of Vagi.—M'Crea and his associates state that the motor activity of the stomach is unaffected by unilateral vagotomy. The motor activity of the stomach, save for the "initial emptying time," is not markedly influenced by double vagotomy. A decrease in the initial emptying time is the only pronounced and constant result of double vagotomy. Initial emptying time is reduced by hepatic vagotomy.

Arneth Count.—A study has been made by Ponder and Flinn of the statistical errors encountered in the carrying out of Arneth counts. The counting of 100 polymorphonuclears is held to be quite sufficient for all purposes, and for most it is enough to count only fifty cells. The relation between nuclear configuration and phagocytic activity was studied, various types of bacteria being used for ingestion. With *Staphylococcus aureus, M. catarrhalis, B. coli* and *B. tuberculosis* no significant difference was found between the phagocytic activity of the various Arneth classes of polymorphonuclears. The errors relating to these counts which accompany ingestion are dealt with, and their importance is shown.

Arneth Count: Nuclear Material.—Ponder concludes that the progressive development of the cells through the successive Arneth classes—if this, indeed, takes place—is not accompanied by a progressive diminution in the amount of nuclear material, as judged by the nuclear area. Heidenhain's rule, as a test for age, thus fails in this case.

Arneth Count: Effect of Thyroidectomy.—Ponder and Flint state that the removal of the thyroid has no observable effect on the Arneth count in adult rabbits—at least within five weeks of the operation. Taken in conjunction with the results obtained from thyroid injections, this indicates that although the injection of thyroid extract results in an increase in the activity of the bone marrow and the output of younger cells into the circulation, the removal of the gland does not alter the stage of maturity at which the polymorphonuclears are liberated.

Arneth Count: Effect of Thyroid Injections.—By means of a single injection of thyroid, Ponder was able to produce a deflection of the Arneth count, a large number of cells of class I being introduced into the circulation. The cells of class I develop in the blood stream into cells of class II, these into cells of class III, and so on until class V is reached. In animals, under the conditions of these experiments, the cells leave the blood stream principally from classes IV and V. In the experimental animals used, the duration of time which a polymorphonuclear spends in the circulation is from two to three weeks. About ten polymorphonuclears are produced by the marrow per diem.

Effect of Pituitary Extracts on Pulmonary Circulation.—The effect on the circulation of the substance separable by alcohol from the posterior lobe of the bovine pituitary, and the effect of the residue after such separation, was studied by Sharpey-Schafer and MacDonald experimentally on animals. The alcohol extract, when dried and dissolved in water, reproduces in all respects the action of histamine. The residue after extraction with alcohol, when dried and dissolved in water, differs somewhat in its action in the species examined. Some of these differences are explained when the effects produced on the heart are observed and recorded. In the cat, the effect on the heart is generally slight and may be absent; in the dog and rabbit the heart is slowed and markedly weakened, and although the slowing may be abolished by atropine the weakening is not thereby abolished, or at least far less readily. The result of a first sufficient dose of this substance, both on the blood vessels and on the heart, is to establish immunity to the effect of subsequent doses, an immunity that requires a considerable time to wear off.

Need for Vitamin E.—The presence of vitamin E in ether extract of crushed oats is shown by Kennedy, and its necessity for normal reproduction in both male and female rats is confirmed. Deficiency of calcium in an otherwise complete diet is shown to induce sterility in both male and female rats. The effect is probably on the germ cells. A protein intake of 75 per cent in the form of caseinogen is also found to result in sterility in both sexes of the rat. Again, it is apparently the germ cells that are affected. Mitchell's assertion that agar-agar is necessary for reproduction when feeding with purified diets is not confirmed, but it is found to be of benefit in feeding with a diet of more than 70 per cent protein, without other carbohydrate. Reader and Drummond's observation regarding the absence of kidney degeneration after the excretion of very large quantities of nitrogen over periods of about four months is confirmed.

Nervous Control of Respiration.—Experiments are described by M'Dowall which show that the influence of the vagus in restraining respiration, as indicated by the effect of block or of section, may be caused to vary. Acids, asphyxia, epinephrine and sensory stimulation reduce the influence of the vagus, and under such circumstances section or block of the vagi has little or no effect on respiration. Rest, acapnia, alkalis and ergotamine (especially if combined) increase the influence of the vagus, and under such circumstances the effect of section or block may be very profound; indeed, breathing may be altogether arrested.

South African Medical Record, Cape Town

24: 353-376 (Aug. 28) 1926

Moral Imbecility. M. J. Cohen.—p. 354.
Retained Placenta. D. Traill.—p. 358.
Potable Waters of Coast Towns of South and East Africa, with Those of Islands en Route. F. L. Wood.—p. 359.
Nocturnal Enuresis. E. B. Fuller.—p. 362.
Some Abdominal Masses. C. C. Elliott.—p. 364.
*A Karroo Snydrome. J. P. Duncan.—p. 365.
Point-Focal and Bifocal Lenses in Practical Use. A. Verwey.—p. 367.
Three Cases of Hypertrophic Pyloric Stenosis. A. M. Geddes.—p. 370.

Karroo Syndrome; Chronic Tuberculosis of Lymph Glands.—Duncan has endeavored to ascertain the reason for a certain lack of stamina among South African Boers in the Karroo region. He found that a certain syndrome kept recurring among the boys and girls between the ages of about 2 and 12 or 13. These children would suddenly, possibly in the course of a few hours, become acutely ill, with fairly high fever, foul tongue, and some disturbance of the alimentary tract, sometimes with flatulent distention and constipation, at other times with diarrhea, and generally with minor discomfort in the abdomen. This appeared to be an upset of the digestion, but occasionally the temperature was so high that delirium set in on the first night. Associated with this apparent alimentary upset, a complaint was made that the throat was sore, but, on examination of the fauces, no appreciable abnormality could be discovered. What was really the matter was tenderness in the lymph glands in the upper part of the neck, and on palpation in the triangles of the neck, chains of small hard lymph glands were palpable seldom larger in size than a pea, and mostly distinctly smaller than this, and the sore throat complaint turned out to be due to the tenderness of one or more, or sometimes of many of these glands. This syndrome was found to recur rather frequently among the children of all classes of the white population, and it was found sometimes to occur at intervals in several children in the same family. Duncan feels that the condition is of the nature of a chronic tuberculosis. The most obvious explanation of the acute attacks is to regard the alimentary upset as the exciting cause of a temporary lighting up of inflammation in the glands. In turn, the alimentary upsets seemed often to be determined by trivial causes, and the question arises whether or not the alimentary tract itself may not also be a focus of the chronic infection, especially as the glands in the groins, and sometimes at least along the iliac vessels, are affected as well as those in the neck.

Tubercle, London

7: 521-576 (Aug.) 1926

*Value of Cutaneous Tuberculin Test in India. M. K. Pai and C. A. Venugopal.—p. 521.
Tuberculosis in Japan. C. Nicory.—p. 530.
Treatment of Pulmonary Tuberculosis by Sanocrysin. B. R. Clarke.—p. 534.

7: 577-632 (Sept.) 1926

Urban Workshops for Tuberculous Workers. N. Bardswell.—p. 577.
Handicrafts in Sanatorium. C. Moore.—p. 580.
Treatment of Pulmonary Tuberculosis by Sanocrysin. B. R. Clarke.—p. 584.

Value of Tuberculin Test in India.—The test has been studied by Pai and Venugopal in 3,392 cases, including clinically tuberculous and nontuberculous patients. The infection rate for the general population in Madras is 94.2 per cent, there being no appreciable difference between males and females. The clinical value of the test was found not to be decisive; 32.2 per cent of clinically nontuberculous persons gave strongly positive reactions; 96.7 per cent of all tuberculous individuals gave a positive reaction of varying degrees, 49.8 per cent reacting strongly.

Annales des Maladies Vénériennes, Paris

21: 481-560 (July) 1926

Syphilis Inherited from the Father. J. Golay.—p. 481.
Instability of Wassermann Test During Specific Treatment. H. Gougerot and E. Peyre.—p. 485.
Conjugal Syphilis. G. Mestchersky.—p. 492.
Treatment of Urethral Fistulas. Matarasso.—p. 496.

21: 561-640 (Aug.) 1926

Treatment of Venereal Buboes. A. Marras.—p. 561.
*Method of Rendering Fixation Reaction More Sensitive. A. Banciu.—p. 590.

21: 661-740 (Sept.) 1926

Negative Wassermann Reaction Becoming Positive During Specific Treatment. H. Gougerot and E. Peyre.—p. 661.
Clinical Value of Meinicke Test. F. E. Saratzeano.—p. 673.
Recurring Erythrodermia from Antisyphilitic Treatment. R. Bernard.—p. 692.

Technic for Rendering the Fixation Reaction More Sensitive.—Banciu explains why the fixation reaction is negative in certain cases of syphilis. Experiments showed, he says, that a part of the complement-fixing antibodies are absorbed in the syphilitic blood by leukocytes, chiefly the polymorphonuclear. Thus the specific antibodies are not detected in the serum if their amount is not above that usually absorbed by the polymorphonuclears. This may happen in primary syphiloma, also in tertiary lesions, as gumma or aortitis. His technic to liberate the absorbed antibodies is as follows: From 15 to 20 cc. of venous blood are drawn into a test tube containing a few glass beads. The tube is vigorously shaken for ten or twelve minutes and then placed in the centrifuge for five or ten minutes. The serum presents a ruby red color from the diffused hemoglobin. This does not interfere in any way with the reading of the results. The test is now proceeded with as usual. In 250 nonsyphilitic persons, the reaction was negative with the ordinary serum and with that obtained by this method. In twenty-five of thirty-two cases of primary syphilis, the results were positive with the latter, while negative with the former. In secondary syphilis, the reactions were always positive with both serums. In tertiary syphilis, the parallel tests were both positive in most of the cases, the fixation appearing more pronounced with the serum of the hemoclased blood. In 296 cases of latent syphilis the reactions were negative in 33 per cent with the ordinary serum, while positive with the other. In two of eight cases of congenital syphilis, the results were positive with the hemoclased blood serum, negative with the ordinary.

Bulletins de la Société Médicale des Hôpitaux, Paris

50: 1365-1430 (July 30) 1926

Action of Acetylcholine on Arterial Tension. M. Villaret et al.—p. 1365.
*Effect of Nonspecific Factors on Immunity. C. Zoeller and G. Ramon.—p. 1370.
Fixation Abscess for Meningococcemia. E. Lesné et al.—p. 1376.
Antigangrene Serum in Treatment of Pulmonary Gangrene. M. Loeper and R. Garcin.—p. 1383.
Pseudotuberculous Form of Pulmonary Cancer. M. Loeper and R. Garcin.—p. 1387.
Paraplegia from Hysteria Simulating Pott's Disease. L. Tixier and P. R. Bize.—p. 1392.
Bone Lesions with Varicose Ulcer. A. Sézary and A. Lichtwitz.—p. 1396.
Histologic Study of Rheumatic Nodes. Crouzon and I. Bertrand.—p. 1401.
Histologic Examination of Juxta-Articular Nodes. E. Jeanselme and O. Eliascheff.—p. 1404.
Histology of Gangrene of the Lung. G. Caussade and A. Tardieu.—p. 1407.
Pleuropulmonary Perforations. A. Bernou.—p. 1410.
Recurrence of Amebic Dysentery After Thirty-Three Years. C. Flandin and L. Duchon.—p. 1416.
Action of Secretin on Pancreatic Secretion. Chiray et al.—p. 1417.
Sensitization to Sun Rays from Acridin Dyes. A. C. Guillaume.—p. 1426.
Roentgenotherapy of Tumor of Gasserian Ganglion. D. Paulian.—p. 1428.
Peduncular Syndrome Associated with Diabetes Insipidus. D. Paulian.—p. 1429.

Influence of Nonspecific Factors on Antitoxic Immunity.—Zoeller and Ramon mixed 0.05 Gm. of potato-starch with 10 cc. of diphtheria or tetanus anatoxin. Injection of this anatoxin induced a faint red spot which soon disappeared. Five-tenths, 2 or 3 cc. of sterilized milk was mixed with 0.5 or 1 cc. of diphtheria or tetanus anatoxin. Immunity thus induced did not appear to be superior to that from pure anatoxin. Two individuals with a positive Schick reaction were treated as follows: A dose of 0.5 cc. of diphtheria anatoxin was injected in a region congested by dry cupping. Then 10 cc. of blood withdrawn from the same person was mixed with 1 cc. of diphtheria anatoxin, and the mixture used for the second injection, given subcutaneously. In both, the antitoxic immunity was excellent showing an increase from one-hundredth of an antitoxic unit to 30 units. Four persons with a negative Schick reaction were first injected with 1 cc. of tetanus anatoxin, two weeks later with 2 cc. There was no rise in the amount of the diphtheria antitoxin. One person was treated with diphtheria and tetanus anatoxins, and later given an injection of tetanus anatoxin alone. The antitetanus titer rose from immunity for 10 to that for 1,000 lethal doses. The immunity against diphtheria remained unchanged. Two persons with a positive Schick reaction were inoculated with diphtheria and tetanus anatoxins. The Schick reaction became negative. An injection of tetanus anatoxin alone, six months later, greatly increased the amount of tetanus antitoxin within eight days. The amount of diphtheria antitoxin did not change. The research was continued on animals. Guinea-pigs immunized with tetanus anatoxin showed no immunity against diphtheria, nor did immunization against diphtheria protect them against tetanus toxin.

Comptes Rendus de la Société de Biologie, Paris

95: 517-596 (July 23) 1926. Partial Index

*Hypophysin in Cerebrospinal Fluid. W. Mestrezat and Van Caulaert.—p. 523.
*Pregnancy Vomiting and Placenta Extracts. Lévy-Solal et al.—p. 526.
*Immunization by Heated Serum. L. Camus and E. Gley.—p. 535.
Gonococcus Lysovaccine or Toxin in Treatment of Urethritis. Jausion and Diot.—p. 538.
Specific Action of Follicular Fluid. L. Brouha and H. Simonnet.—p. 540.
Fermentation of Coffee with Yeast. C. Picado.—p. 543.
*Edema Fluid in Vaccination Against Anthrax. A. Urbain and L. Rossi.—p. 544.
*Affinity of Oleïc Ester for the Cells of Certain Organs. P. Carnot and R. Coquoin.—p. 553.
Lysis of Tubercle Bacilli in Sputum. C. Richet, Jr., and P. Hauduroy.—p. 556.
*Action of Intraduodenal Injection on Pancreatic Secretion. J. Freud and Saadi-Nazim.—p. 571.
*Influence of Spleen Extract on Tuberculosis. Moureau and C. Gruvel.—p. 589.
*Minerals of Body Fluids and Tissues in Renal Edema. E. Aubel et al.—p. 592.
Experimental Renal Edema. P. Mauriac and E. Aubel.—p. 593.
Effect of Albuminoids on Insulin Action. P. Mauriac and L. Servantie.—p. 594.

Pituitary Secretion and Cerebrospinal Fluid.—In fifteen experiments the uterus of the guinea-pig did not contract when spinal fluid obtained from the horse by lumbar puncture was added to the Tyrode solution in which it was preserved. Evidently the lumbar fluid does not contain hypophysin. On the other hand, contraction of the uterus occurred constantly in eight experiments in which the dog's carebral fluid (occipital puncture) was added to the solution. The phenomena

were correspondingly identical when spinal or cerebral fluids from persons with nervous or mental diseases were used for the experiments. The facts agree with Cushing and Goetsch's theory that the pituitary secretion is poured into the cerebrospinal fluid at the third ventricle, and favor the view that it passes into the blood stream by way of the veins and lymphatics of the spinal meninges, into which it obtains entrance in accordance with the law of the permeability of the meninges from within outward.

Pregnancy Vomiting and Shock from Placenta Extracts.—Intracardiac injection into guinea-pigs of 0.5 cc. of extract prepared from the placentas of women who had undergone therapeutic abortion for uncontrollable vomiting had no effect on the animals. Lévy-Solal, Dalsace and Cohen-Solal then injected seventeen guinea-pigs with a mixture of the extract and blood serum from women with or without vomiting. The injections were followed by shock in thirteen. Injection of the serum alone had proved harmless. Their conclusions are that the placenta of women with uncontrollable vomiting seems to possess an antigen which, when acted on by fresh human serum and then injected into the guinea-pig promptly determines shock characterized by convulsions. This antigen was absent in normal placentas and in old placenta extracts. Gravid animals presented a certain resistance to the shock. The first injection did not desensitize the animals.

Immunization Against Muraena Serum by Means of the Same Serum Heated.—Camus and Gley made immunizing experiments on four rabbits with serum from Muraena helena, known to be highly toxic. In two instances, heated serum was used. A week later, the animals were injected with a lethal dose of the same serum. While those previously treated with the heated serum developed only slight and transient morbid phenomena, the others promptly died. Evidently the serum which became atoxic from heating retained its antigenic property and exerted greater immunizing power than the toxin itself.

Vaccination Against Anthrax with Edema Fluid.—Guinea-pigs were vaccinated with sterilized edema fluid taken from guinea-pigs with fatal anthrax. About 50 per cent of the animals in which the fluid was injected subcutaneously or into the peritoneum showed resistance to the anthrax virus. All the animals to which intradermal injections of the fluid were given became immunized. The fluid was without effect when given intravenously. Urbain and Rossi add that skin immunization is slow but of great value in anthrax infection.

Affinity of Oleic Ester for Organ Cells.—Carnot and Coquoin explored the action of various oleic acid esters in treatment of cholelithiasis. Methyl oleate appeared to be the most suitable. It dissolves cholesterol best, does not cause irritation, and is well tolerated when given by intramuscular or subcutaneous injections. Experiments on dogs showed an elective affinity of oleic ester for the liver and gallbladder cells. Pancreas, intestines and lungs were examined, but the bronchial cells alone showed any considerable retention of the oleate. The authors intend to publish soon the results of injections of the ester in biliary and bronchial diseases.

Action of Intraduodenal Injections of Acid on Pancreatic Secretion.—In Freud and Saadi-Nazim's experiments on dogs, intraduodenal injections of hydrochloric acid caused reduction of the blood sugar. This occurred from fifteen to thirty minutes after the injection and persisted from one to two hours. It is possible that a secretin, liberated from the intestinal mucosa under the action of the acid, provokes secretion not only of pancreatic juice but also of insulin.

Influence of Spleen Extracts on Tuberculosis.—Guinea-pigs were inoculated with tuberculous sputum and then treated with spleen extract. Moureau and Gruvel found that the tuberculous process was not retarded nor was life prolonged. On necropsy, the tuberculous lesions in the treated animals were as pronounced as in the nontreated.

Mineral Content of Body Fluids and Tissues in Nephritis with Edema.—Aubel, Mauriac and Boutiron examined the blood and edema fluid of a woman, aged 60, with nephritis and edema, shortly before she died. The p_H of the plasma was the same as in the edema fluid. The proportion of sodium chloride was increased in the blood and in the tissues, pointing to retention, chiefly of the sodium. The total phosphorus was increased in the blood but reduced in the tissues, testifying to profound disturbance in the mineral balance.

Presse Médicale, Paris

34: 1185-1192 (Sept. 18) 1926

*Serotherapy of Acute Myelitis. G. Etienne.—p. 1185.
Diathermy for Trigeminal Neuralgia. H. Bordier.—p. 1186.
Permeability of Hydatid Cysts and Nature of Hydatid Poison. G. Lemaire.—p. 1187.
Sialography. Jacobovici et al.—p. 1188.

Serum Treatment of Acute Myelitis.—Etienne reports the results in seventeen cases of acute myelitis treated with antipoliomyelitic serum. Of eleven patients treated with adequate doses of the serum, nine recovered completely. Slight paresis persisted in one instance; one patient died. Only partial success was obtained in three patients to whom, owing to a limited supply, he was unable to give sufficiently large doses. The treatment failed in three apparently hopeless cases. Of nine cases treated otherwise than with serum, there was nearly complete recovery in one, grave sequelae in three; complete incapacity in four; death in one. The total dose varied from 100 to 350 cc. distributed over from four to eleven days. He believes that 100 cc. per day is the best dose to start with. Treatment with small doses should be continued after improvement has set in. The serum was injected subcutaneously, intramuscularly, and intraspinally; the latter method is liable to be followed by intense meningeal reactions.

34: 1193-1208 (Sept. 22) 1926

*Venous Tension in Mental Diseases. H. Claude et al.—p. 1193.
*Physiologic Rôle of Middle Cervical Ganglion. R. Leriche and R. Fontaine.—p. 1194.
D'Hérelle's Bacteriophage in Treatment of Staphylococcus Infections. P. Hauduroy et al.—p. 1195.
Sedimentation of Erythrocytes in Mental Diseases. B. Siwinski.—p. 1197.
Ethylene Trichloride Poisoning. Carrieu and Marc.—p. 1199.
Pathogenesis of Arterial Hypertension. P. Oury.—p. 1200.

Variations of Venous Tension in Mental Diseases.—Claude, Targowla and Lamache found the venous pressure increased from 16 cm. of water to 20 cm. in the milder forms of melancholia, dementia praecox, general paralysis, alcoholism, mental confusion and polyneuritic psychosis; it rose to 36 cm. in severe cases with stupor or depression, with cyanosis of the limbs and slow circulation. High venous pressure was rarely observed in mania. The pressure paralleled the gravity of the disease, lowering as the patient's condition improved. Venous hypertension appears to be connected with functional failure of the myocardium and with respiratory insufficiency, as evident especially in acute psychosis. It may also be associated with disturbances of the endocrine glands or of the vegetative system.

Phenomena in Larynx and Pharynx Following Removal of Middle Cervical Ganglion.—Leriche and Fontaine observed certain morbid phenomena in the throat after an operation on the cervical sympathetic. They were dryness of the throat, hoarseness and difficulty in swallowing, associated with hyperemia and edema of the tongue, larynx and pharynx. In a recent case in which the middle cervical ganglion only was removed, all these symptoms were as marked as after more extensive operations. He suggests that this ganglion may represent a vasomotor center for the larynx. In cases in which therapeutic hyperemia is indicated, as in laryngeal tuberculosis, removal of this ganglion might prove efficacious.

34: 1209-1216 (Sept. 25) 1926

*Suprarenals and Blood Sulphur. Loeper et al.—p. 1209.
*Thoracic Pains in Perforation of Duodenal Ulcer. E. Desmarest.—p. 1211.
Recurrence of Cerebrospinal Meningitis After Trauma. L. Weitzel and L. Martin.—p. 1211.

Rôle of Suprarenals in Blood Sulphur Regulation.—Loeper, Decourt and Garcin noted an increase of blood sulphur in three cases of Addison's disease; the proportion of the oxidized sulphur was reduced, while that of the neutral sulphur was increased. Analogous phenomena were observed in dogs after removal of a suprarenal. Further experiments showed that the blood of the suprarenal artery contains much more sulphur than that of the corresponding vein and that in the artery the proportion of oxidized to neutral sulphur is lower than in the vein. It appears evident that the suprarenal

glands retain a part of the blood sulphur, especially of the neutral. This was confirmed on large numbers of the suprarenal glands of sheep. A part of this sulphur is utilized for formation of the suprarenal pigment. Melanoderma, they hold, is the consequence of an exaggerated elimination by the skin of the sulphur retained in excess in the blood, in conditions in which suprarenal function is impaired.

Diagnostic Value of Thoracic Pains in Perforated Ulcers of the Duodenum.—Desmarest calls attention to this clinical sign which has been found of value in diagnosis of perforation of a duodenal ulcer. In three of his cases, there was a severe epigastric pain radiating to the right supraclavicular and sometimes to the scapular region. In two instances, the particular localization of the pain suggested the differential diagnosis from perforated appendicitis.

Revue Médicale de la Suisse Romande, Geneva

46: 517-580 (July 25) 1926

Idiopathic Serous Peritonitis. P. Duperthuis.—p. 517.
Danin's Method of Diagnosing Gonorrhea in Women. E. Urech.—p. 538.
Babinski's Sign in Poisonings and Infections. G. Piotrowski.—p. 542.

46: 581-644 (Aug. 25) 1926

*Calcium Chloride in Treatment of Pleurisy. A. Bolle.—p. 581.
Disease from Suprarenal Hypersecretion. C. L. Regard.—p. 592.
Anaphylaxis in Protein Therapy. S. Katzenelbogen.—p. 597.
Prevention and Treatment of Serum Sickness. A. Cramer and S. Katzenelbogen.—p. 609.

46: 645-708 (Sept. 25) 1926

Tetany in Young Children. P. Bourdillon.—p. 645.
Nonfebrile Exacerbations in Chronic Tuberculosis. M. Reymond.—p. 670.
Stierlin's Picture in Ileocecal Tuberculosis. A. Eghiayan and H. Wohlers.—p. 680.

Calcium Chloride in Treatment of Exudative Pleurisy.—Bolle obtained excellent results from treatment of tuberculous exudative pleurisy with calcium chloride and sodium salicylate. The usual dose of the calcium chloride was at least 15 Gm. per day, given a teaspoonful every two hours. The salicylate was administered in two daily enemas, each containing 2 Gm. in 10 or 20 cc. of warm water. It may be given by the mouth if the condition of the stomach is satisfactory. The diet was restricted as to liquids and salt. The treatment was continued until complete disappearance of the pleural effusion, which required from sixteen to thirty-two days in the eight cases reported.

Schweizerische medizinische Wochenschrift, Basel

56: 777-800 (Aug. 14) 1926

*Pulsus Alternans Minimus. W. Löffler.—p. 777.
*Transfusion in Anemia of Pregnancy. A. Reist.—p. 781.
Polycythaemia Vera. H. Ryser.—p. 786.
Resistance of Melanomas to Roentgen Rays. G. Miescher.—p. 788.
Dermatoses Accompanying Malignant Tumors. E. Ramel.—p. 790.
Curiosities. J. Fallscheer-Zürcher.—p. 792.
Hemorrhagic Pancreatitis. E. Stotzer.—p. 793.

Pulsus Alternans Minimus.—This phenomenon has been designated by Gallavardin as latent or minimal pulsus alternans. It may be observed in auscultatory determination of blood pressure, when lowering the pressure in the cuff slowly: the pulse appears to be at first only half as frequent as it really is. With further lowering of the applied pressure, all the beats are heard, but every second beat is less strong.

Transfusion in Anemia of Pregnancy.—Reist reports good results of treatment of grave anemia of pregnancy by repeated blood transfusions.

Policlinico, Rome

33: 1177-1207 (Aug. 23) 1926

Tuberculous Pleurisy and Immunity. R. Moro and G. Pirani.—p. 1177.
Syphilis with Pigmentation. M. Faberi.—p. 1183.
Surgery of Appendicitis. L. Urbani.—p. 1185.

Riforma Medica, Naples

42: 769-792 (Aug. 16) 1926

Organization of Tuberculosis Institutions. A. Ferrannini.—p. 769.
*Cholesteroluria in General Paralysis. E. Vergara.—p. 771.
Alimentary Leukopenia in Cancer. G. Macchioro.—p. 773.
Alleged Homeric Hygiene. L. Torraca.—p. 782.
Cancer of the Tongue from Leukoplasia. G. Cirillo.—p. 788.

Cholesteroluria in General Paralysis.—Vergara found cholesterol in the urine of ten patients with progressive paralysis.

42: 793-816 (Aug. 23) 1926

Pathogenesis and Immunity in Tuberculosis. E. Maragliano.—p. 793.
*Cholesterol Metabolism in Lipoid Nephrosis. C. Cipriani and R. Moracchini.—p. 796.
Arneth Formula in Appendicitis. E. Santoro.—p. 799.
Diabetes Insipidus. R. de Beden.—p. 802.
Blood Transfusion. G. Tesauro.—p. 809.
Accidents in Bismuth Treatment. G. Nardi.—p. 812.

Cholesterol Metabolism in Lipoid Nephrosis.—In Cipriani and Moracchini's patient with lipoid nephrosis the hypercholesterolemia persisted much longer than the edema. The urine, bile, feces and the opalescent transudate did not contain much cholesterol. Food containing large amounts of cholesterol did not raise its concentration in the blood nor in the excreta. They conclude that the organism in nephrosis is not able to destroy or transform cholesterol.

Crónica Médica, Lima

43: 1-32 (Jan.) 1926

*Bone Marrow Function Test. R. Antoncich.—p. 3. C'en.—p. 65.
Quantitative Tests for Biliary Salts. E. Guzman Barron.—p. 13.
False White Swelling of Syphilitic Origin in a Woman. C. Villaran.—p. 17.

43: 65-96 (March) 1926

Drug Addiction in General. L. Bard.—p. 73.
Biologic Reactions in Peruvian Verruca. A. Guzman Barron.—p. 79.

Test of Bone Marrow Function.—Antoncich remarks that the simplest and most instructive test for this purpose is Paul Habetin's method, based on the exaggeration of the leukocyte producing function under the influence of injection into the thigh of 10 cc. of a 5 per cent solution of sodium nucleinate. It threw light on the prognosis in his fourteen cases of anemia, reflecting the intensity and the course of the process. The insufficiency in bone marrow functioning in the anemia from malaria was always graver in the *falciparum* cases.

Prensa Médica Argentina, Buenos Aires

13: 221-252 (Aug. 10) 1926

*Insulin in Treatment of Denutrition. C. Bonorino Udaondo and A. Fontana.—p. 221.
*Diagnosis of Pleural Effusion. A. J. Heidenreich.—p. 226.
Calcium Content of the Blood. C. P. Waldorp.—p. 239. C'tn.
*Treatment of Vomiting in Malaria. R. Alvarado and V. Arroyabe.—p. 242.

Insulin in Treatment of Denutrition.—Summarized when published elsewhere.

Sign of Pleural Effusion.—The postural change of site of a pleural effusion may be the only means to detect a small accumulation of fluid. Auscultation reveals the occurrence or accentuation of a vesicular murmur and pathologic sounds at the base of the lung as the patient changes from the seated to the ventral prone position. The effusion may then become visible for the first time with the roentgen rays.

Excessive Vomiting in Malaria.—Alvarado and Arroyabe found epinephrine promptly effectual in arresting vomiting in malaria. They gave it by the mouth or hypodermically, 1 or 2 mg. daily. The benefit from it explains that the vomiting is a manifestation of suprarenal insufficiency, which is probably responsible also for the asthenia sometimes noted in malaria.

13: 253-284 (Aug. 20) 1926

Certain Forms of Acute Tuberculosis in the Pregnant. P. P. Piñero Garcia et al.—p. 253.
*The Sugar of the Lymph. O. Pico Estrada and V. Morera.—p. 269.
Activity of Catalase in Normal and Cancer Tissues. A. H. Roffo and B. Barbará.—p. 274.

The Dextrose in Lymph.—Pico Estrada and Morera noted wide differences at times in the dextrose content of the lymph from the thoracic duct of twenty-five dogs. There sometimes was twice as much as in the plasma. Insulin reduced it in both, while ingestion of oil tended to increase it.

Revista Médica Latino-Americana, Buenos Aires

11: 1683-1832 (July) 1926

Present Status of Malaria Question. V. Ascoli.—p. 1683.
*Recovery of a "Black Cardiac." R. A. Bullrich.—p. 1689.
Comparison of Roffo and Botelho Tests. R. Araya et al.—p. 1700. (Summarized elsewhere.)
High Frequency Current in Gynecology. J. Iribarne and R. Chaet de Pavé.—p. 1705.
Cholecystography. Manoel de Abreu.—p. 1721.

Generalized Torsion Spasm. A. S. Marotta.—p. 1733.
Flocculation Test in Diagnosis of Tuberculosis. N. Romano and P. Croveri.—p. 1769.
Radiology in Gynecology. C. Heuser.—p. 1778.
Recovery in Grave Epidemic Encephalitis. P. B. Aquino and J. E. Solá.—p. 1782.

Recovery of a "Black Cardiac."—Bullrich relates that the man who was described last year as a typical example of the Ayerza type of heart disease has thrown off the syndrome completely, although he is still a syphilitic with chronic bronchitis and emphysema. The improvement followed a vigorous course of specific treatment.

Revista de Medicina y Cirugía, Caracas

10: 97-115 (June) 1926

Bismuth in Treatment of Buba. D. Mendoza.—p. 97. C'cn.
*Ruptured Tubal Pregnancy. D. Mendoza.—p. 102.
Present Status of Gastric Ulcer. L. Razetti.—p. 105.

Tubal Pregnancy Without Suspension of Menstruation.—The pain at McBurney's point, the fever, retention of urine and meteorism were ascribed to appendicitis, but the laparotomy showed a normal appendix with a ruptured tubal pregnancy.

Beiträge zur klinischen Chirurgie, Berlin

137: 187-360, 1926

*Tetanus Treatment with Local Anesthetics. O. Wiedhopf.—p. 187.
*Hematoma Treatment of Local Anthrax. K. H. Erb.—p. 202.
The Climate of the German Mittelgebirge. H. Tichy.—p. 217.
Rare Form of Cancer of Penis. M. Biebl.—p. 228.
Chronic Abscess of Mammary Gland. A. Tobeck.—p. 242.
*Intratracheal Insufflation Anesthesia. C. Hirschmann.—p. 248.
Cancer of Esophagus. R. Sapir.—p. 297.
Causes of Death in Appendicitis. W. Schär.—p. 310.
Blood Vessels of the Upper End of Femur. A. Nussbaum.—p. 332.
Tuberculosis of Jaw Simulating Tumor. H. Bronner and C. Krumbein.—p. 346.

Local Anesthetics in the Treatment of Tetanus.—From animal experiments and experience with patients Wiedhopf concludes that, though local anesthetics do not influence the outcome of the infection, they relieve temporarily the severest spasms, enabling food to be taken and the mouth cleansed. Spasms in swallowing were not observed after relaxation of the masseter by injection of a local anesthetic.

Hematoma Treatment of Local Anthrax Infection.—A case of anthrax of both thighs was treated by Erb with injection of the patient's blood into the tissues around and beneath the carbuncles. A hematoma two to three finger-breadths in width was formed around each lesion. The edema and the tenderness and swelling of the regionary lymph glands subsided much more quickly in this case than in a case of anthrax of the arm which was under conservative treatment at the same time, and the former patient was able to return to work five weeks before the latter. The scar in the first case is scarcely visible, in the second there is pocklike scar. Erb believes that this method, proposed by Läwen, would be especially valuable if the lesion were on the face. For malignant cases he suggests cauterization or excision of the primary focus after hematoma treatment. In animal experiments he was able, in some instances, to prevent or delay threatened anthrax septicemia by this method; the hematoma acts, he believes, as a mechanical hindrance to bacterial invasion.

Auer-Meltzer's Intratracheal Insufflation Anesthesia According to Analyses of the Gases in the Blood.—Hirschmann found that during insufflation anesthesia there is a decrease of oxygen in the arterial blood. The insufflation has not sufficient aerative action on the blood and does not overcome the bronchial dead space. Natural respiration cannot be replaced by continued insufflation. Repeated interruptions of the continuous insufflation, although they effect an artificial ventilation, cannot prevent the decrease of oxygen and increase of carbon dioxide. Spontaneous respiration only is effective. Biologically Meltzer's intratracheal insufflation anesthesia is a variant of inhalation anesthesia. Apnea, being a symptom of poisoning from the anesthetic, must be prevented. The increase of carbon dioxide in the blood shows that this condition does not depend upon acapnia. The chief advantage of insufflation anesthesia is the uniformity in the distribution of the anesthetic dose.

Biochemische Zeitschrift, Berlin

175: 1-252 (Aug. 23) 1926. Partial Index

Vasoconstrictive Substances in Blood Serum. H. Bogert and K. Keitel.—p. 1.
Diuretic Poisons. T. Masuda.—p. 8.
Blood Vessels and Epinephrine. Y. Okuyama.—p. 18.
Extracts of Accessory Thyroid Gland. M. Köhler.—p. 27.
Esterase in Autolysis of Liver. H. Kosterlitz and H. Petow.—p. 31.
Ovarian Hormone. M. Hartmann and H. Isler.—p. 46.
Ingested Iron and the Urinary C: N Ratio. H. Wada.—p. 62.
*Cell Poisoning by Cyanogen. H. Blaschko.—p. 68.
Hydrocyanic Acid Poisoning of Enzymes. M. Jacoby.—p. 79.
*Inorganic Cations in Blood Serum. K. Keitel.—p. 86.
*Carbohydrate Metabolism. T. Brugsch and H. Horsters.—pp. 90 and 130.
Iodine Content of the Thyroid. E. Hergloz.—p. 175.
Urea in Bacteria. N. N. Iwanoff.—p. 181.
Proteolytic Ferments in Serum. H. J. Fuchs.—p. 185.
Ferments of the Skin. J. Wohlgemuth and E. Klopstock.—p. 202.
Idem. J. Wohlgemuth and Y. Nakamura.—p. 216.
Sugar Decomposition in Central Nervous System in Man. J. Wohlgemuth and Y. Nakamura.—p. 233.
Hydrolysis of Starch. K. Takane.—p. 241.

Mechanism of the Inhibition of Cell Respiration by Hydrocyanic Acid.—Blaschko deals with Warburg's theory of cell respiration, according to which the heavy metals, especially iron, transport the oxygen into the cell for oxidation of the nutritive matter. Poisoning of the breathing cell by small amounts of hydrocyanic acid is explained by the formation of a complex compound between the cyanogen group and the metal, which thus loses its catalytic power. Most of these complex metal compounds are stable, which makes it difficult to explain the reversibility of the cell poisoning by hydrocyanic acid. The cyanogen might be bound in a similar way as are oxygen and carbon dioxide in hemoglobin. To study this question he carried out cyanogen poisoning in respiration models. The following systems were used: Oxidation of amino-acids by charcoal, decomposition of hydrogen peroxide or oxidation of alcohol by palladium black and oxidation of levulose in phosphate solution. It was found that the inhibiting effect of hydrocyanic acid on the oxidation could be removed by physical means. The reversibility of the cell poisoning cannot therefore be considered as an argument against formation of a complex salt between the hydrocyanic acid and the heavy metal compounds of the respiratory ferments.

Effect of Experimental Acid Poisoning and Extirpation of the Suprarenals on the Inorganic Cations of the Blood Serum.—Keitel induced an experimental acidosis in dogs by injection of hydrochloric acid. He noted a decrease in the amount of inorganic cations, especially sodium, in the blood serum. After extirpation of the suprarenals the amount of the total cations, especially sodium, was increased. He concludes that suprarenalectomy promotes alkalosis.

Hydrogen Ion Concentration of Blood After Injection of Insulin.—Brugsch and Horsters were not able to produce a change in the hydrogen ion concentration of the blood of rabbits by injection of insulin. They did not observe any relations between the blood sugar and the p_H.

Deutsche medizinische Wochenschrift, Berlin

52: 1411-1454 (Aug. 20) 1926

Internal Medicine and Psychotherapy. K. Hansen.—p. 1411.
Chronic Arthritis. H. Strauss.—p. 1414. C'td.
Physical Chemistry in Surgery. I. Wymer.—p. 1416.
"Protection Against Protective Serum." R. Degkwitz.—p. 1419.
Inquiry on Colitis. O. David.—p. 1421.
*The Syphilitic Blood Change. S. Bergel.—p. 1423.
*Bacteriology of Dysentery. G. Elkeles and A. Schneider.—p. 1424.
Prevention and Treatment of Yellow Fever. F. B. Rüder.—p. 1424.
Walter's Bromide Method. F. K. Walter.—p. 1426.
Antagonism of Insulin and Cyanides? J. Szolnoki.—p. 1427.
*Testing the Stomach Secretion Without Aspiration. B. Lewin.—p. 1427.
Treatment of Cardiospasm. W. Sternberg.—p. 1428.
Autohemotherapy in Ulcer Hematemesis. C. Rausche.—p. 1428.
Treatment with All the Alkaloids of Belladonna. J. Weggen.—p. 1429.
Conservative Treatment of Furuncles. G. Brann.—p. 1431.
*Acute Morphine Poisoning. Gottschalk.—p. 1432.
Iodine as Antihidrotic. E. Seifert.—p. 1432.
Treatment of Paralysis and Tabes. K. Löwenstein.—p. 1433. C'cn.
Legislation on Venereal Diseases. H. Roeschmann.—p. 1434.
Hygiene at Gesolei Exhibition. Diebel-Reuter.—p. 1436.
Medical Experts. P. Horn.—p. 1437.

The Syphilitic Blood Change.—Bergel points out that as early as 1912 he induced a positive Wassermann reaction in rabbits and guinea-pigs by intrapleural and intraperitoneal injections of lecithin. The reaction was stronger in the exudate than in the serum.

Bacteriology of Dysentery.—The bacilli observed last year by Elkeles and Schneider in dysentery belonged chiefly to atypical strains. In such cases the true nature of the microorganism may easily escape recognition.

Testing the Stomach Without Aspiration.—Lewin demonstrates the parallelism between the carbon dioxide tension of alveolar air and secretion of hydrochloric acid.

Acute Morphine Poisoning.—Gottschalk observed an almost fatal poisoning in a man suffering from chronic bronchitis after two injections, each containing 0.01 Gm. of morphine with 0.5 mg. of atropine, given within one quarter of an hour. He quotes other instances of danger of morphine in stenosis of respiratory passages.

Jahrbuch für Kinderheilkunde, Berlin

113: 119-244 (July) 1926

Chronic Albuminuria in Children. E. Faerber and T. Demetriades. —p. 119.
*Leukocyte Content of Infant's Kidney. I. von Trossel.—p. 127.
*Etiology of Erythema Nodosum. K. Kundratitz.—p. 155.
Diphtheria. F. v. Szóntagh.—p. 184.
Metabolism in Fever. O. Beck.—p. 198.
Sensitization Against Tuberculin. G. Fedders and R. Goerber-Kaufmann.—p. 211.
*Bacteriology of Measles Pneumonia. N. Henning.—p. 217.

Leukocyte Content of the Kidney in New-Born and Infants.—Von Trossel found that a high leukocyte content is normal in the kidneys of the new-born and infants up to the sixth to eighth week. Later the leukocyte content is low. He was able to demonstrate fetal hemopoietic foci in the kidneys regularly. Infiltration of fat does not seem to occur physiologically in the infant's kidney. Retrogressive metamorphosis was common in the glomeruli. He found the kidney of the infant to be considerably richer in blood than that of the adult.

Etiology of Erythema Nodosum.—Kundratitz bases his opinion that erythema nodosum is of tuberculous nature on a study of eighty-one cases. It is usually an early symptom and has no unfavorable bearing on the prognosis of the tuberculosis. It appears to be esophylactic in nature.

Bacteriology of Measles Pneumonia.—In eighty-five uncomplicated cases of measles Henning found no hemolytic streptococci in the sputum. In primary measles pneumonia he found this microorganism in the sputum and in the internal organs. The cause of death in measles bronchopneumonia is usually a generalized streptococcus infection.

Klinische Wochenschrift, Berlin

5: 1593-1640 (Aug. 27) 1926

Gymnastics for Children. W. Gottstein.—p. 1593.
*Function Test of Respiration. E. Bass.—p. 1597.
*Spirochetoses and the Skin. G. Steiner et al.—p. 1599.
*Nerves and Kidney Secretion. F. Glaser.—p. 1601.
*Chemical Resistance of Bacteria. L. Paneth.—p. 1603.
Vomiting of Hematin. K. Samson.—p. 1606.
*Extremely Soft Roentgen Rays and Bacteria. W. Schepmann and H. Flecke.—p. 1608.
Serodiagnosis of Syphilis in Corpses. C. Krauspe and A. Schmechel. —p. 1611.
*Rupture of Stomach from Sodium Bicarbonate. P. Murdfield.—p. 1613.
Weil's Disease. Adamski.—p. 1615.
*Transmission of Nerve Action by Body Fluids. R. H. Kahn.—p. 1615.
Etiology of Herpes. W. Loewenthal.—p. 1616.
*Hematomas of Joints. P. Seeliger.—p. 1616.
Injury and Tumor. H. Richter.—p. 1617.
Thyroid Treatment. A. Oswald.—p. 1618.
Students of Medicine in Prussia. L. K. Goetz.—p. 1621.
*Treatment of Oil of Chenopodium Poisoning. E. Vogt.—p. 1638.
*Ergotamin Gallbladder Reflex. D. Campanacci and M. Groppali. —p. 1639.

Function Test of Respiration.—Bass devised three tests for examination of the efficiency of respiration. One consists in artificial stenosis represented by breathing through tubes having a diameter of 6, 4 or 2 mm. The second method is breathing against a pressure of 5 or 10 cm. of water, which makes the inspiration easier and the expiration more difficult. The third method is the reverse of the second: breathing against a lower pressure (with difficult inspiration). Healthy subjects react to artificial stenosis by an increase of the inspiratory volume over the expiratory, until a new middle line (connecting the centers of the registered respiratory movements) is reached. The previous middle level is restored by a few respiratory movements after substituting a wide tube for the narrow one. Stenosis produces in asthma patients a reaction the reverse of the normal: the expiratory volume increases and the middle level is thus lowered. Recuperation is slow. He believes that this reaction to stenosis impairs the breathing conditions. Patients with chronic bronchitis without asthma react almost like healthy subjects; vagotonic as well as emphysema patients resemble those with asthma. When the pressure of the respired air is increased by as little as 5 or 10 cm. of water, healthy subjects make a prolonged inspiration, then stop breathing for twenty to thirty seconds. After this they resume breathing on a slightly higher middle level. The respiration is slower and the volume of each breath greater. This enables the person to arterialize his blood in spite of the inflation of the lungs. The lung becomes much more inflated (sometimes 3 liters increase) in asthma patients. No respiratory pause is observed here. When the experiment is discontinued the abnormal inflation persists in such patients for five minutes or more. It is evident that the arterialization of the blood suffers. Emphysema patents react in a similar way, the reaction in bronchitis is almost the same as in healthy subjects, but recuperation takes longer. Breathing against lower pressure prolongs the first expiration (lowering of the middle level) in healthy subjects, but respiration stops for a few seconds and the further behavior is almost the same as before the experiment. In asthma patients the lung collapses markedly, there is no pause and the breathing occurs on a much lower middle level. Even this seems to be a disadvantage to the patient. Emphysema patients react differently: there is no emptying of their inflated lungs, but rather a tendency toward a higher middle level; no pause in respiration. These experiments indicate especially an inability in asthma patients to regulate usefully the middle level.

Spirochetoses and the Skin.—Steiner, Henning and Steinfeld enclosed a piece of liver containing recurrens spirochetes in a free flap of rat's skin, sutured it in the form of a sac and introduced it subcutaneously into another rat, leaving the sutured end outside of the body. The spirochetes evidently migrated through the flap since the host was infected. However, when the skin flap was taken from an immune rat, no infection occurred, although the host proved susceptible to direct inoculation.

Nerves and Kidney Secretion.—Glaser injected intravenously 10 cc. of a 10 per cent solution of calcium chloride and studied its excretion. He found that atropine inhibited it in 17 per cent of the subjects tested, while pilocarpine induced an increased calcium elimination in 11 per cent.

Chemical Resistance of Bacteria.—Paneth grew various bacteria (the half parasites were especially suitable), adding to the media either phenol or glycerol. The former method decreased the resistance of the cultures to hydrochloric acid and chromium sulphate. The cu'ture media containing glycerol increased it.

Extremely Soft Roentgen Rays and Bacteria.—Schepmann and Flecke irradiated various micro-organisms with extremely soft roentgen rays. The germs were killed within a few minutes. The same dose of hard rays had only about half the effect. Moreover, the same dose can be obtained by hard rays only when irradiating for several hours.

Rupture of Stomach from Sodium Bicarbonate.—Murdfield reports the history of a 39 year old man who took a little sodium bicarbonate (on the tip of a knife) after drinking a large amount of beer and other fluids. The patient felt an excruciating epigastric pain immediately after swallowing the sodium bicarbonate. About 6 to 8 liters of fluid were found in the abdomen by the surgeon. Histologic examination made after necropsy revealed an almost normal stomach. The rupture was situated in the typical place in the "stomach roadway" at the lesser curvature, nearer to the cardia. On filling the stomach of corpses quite early after death with

2 to 3 liters of weak hydrochloric acid and subsequently adding a little sodium bicarbonate, Murdfield regularly produced a rupture—at least of the mucous membrane—in apparently normal stomachs.

Humoral Transmission of Nerve Action.—Kahn united two isolated frog's hearts in a sort of parabiosis by an arrangement by which their contents were continually mingled. On stimulation of the nerves of one of these hearts, the other responded promptly in the same manner. These experiments are in perfect accord with Löwi's fundamental observation.

Hematomas of Joints.—Seeliger's experiments indicate that coagulation of blood in joints depends on their function at the time of the hemorrhage. If they are immobilized, the blood clots rapidly, but becomes fluid after twenty-four hours, while fibrin is deposited on the walls. Movements following injection of blood into the joints cause a defibrination of the blood, which remains fluid. No enzyme inhibiting blood coagulation was found in the synovia nor in the synovial membrane.

Treatment of Oil of Chenopodium Poisoning.—Vogt's patient was poisoned by three doses of oil of chenopodium, taken with all precautions during a forenoon, each dose consisting of 16 drops of the oil. Lavage of the stomach and intestine failed. An intravenous injection of 600 cc. of physiologic solution of sodium chloride with 6 ampoules of pituitary extract rapidly induced a movement of the bowls and was followed by recovery. He now considers 12 drops of the oil as a maximum dose for women. He also recommends the use of the combined intravenous injection in any other poisoning where a rapid evacuation of the bowel is desired, as well as in paralytic ileus.

Ergotamin Gallbladder Reflex.—Campanacci and Groppali injected intramuscularly from 0.125 to 0.250 mg. of ergotamin tartrate in a number of subjects after introduction of the duodenal tube. The injection was followed within 5 to 10 minutes by elimination of bile which was more concentrated than that obtained with the Meltzer-Lyon technic.

Medizinische Klinik, Berlin

22: 1285-1322 (Aug. 20) 1926

Prevention of Measles. H. Bischoff.—p. 1285.
*Trichinosis. F. Karpeles and K. Blum.—p. 1289.
*Paracervical Anesthesia in Obstetrics. P. Schneider.—p. 1293.
Treatment of Syphilis. A. Joseph.—p. 1294.
Subepithelial Tuberculin Treatment. E. Ladeck.—p. 1296.
*Polycythemia Ending in Myelophthisis. L. Detre.—p. 1297.
Artificial Pneumothorax. S. Katsura.—p. 1299.
Diagnosis of Cervical Gonorrhea. E. Lindner.—p. 1300.
*Muscle Atrophy and Endocrines. I. Herzog.—p. 1300.
Ileus from Helminths. A. Goldberger.—p. 1301.
*Standardization of Amboceptors. H. Dold and H. Gross.—p. 1302.
Bismuth Elimination. J. Weitgasser.—p. 1305.
Ankylosing Spondylitis and Hysteria. Föhrenbach.—p. 1308.
*Prevention of Measles. Rietschel.—p. 1309.
Physicians and Social Insurance. O. Oesterlen.—p. 1320.

Trichinosis.—Karpeles and Blum observed several cases of trichinosis. The atypical feature common to them was the absence of any considerable or permanent eosinophilia.

Paracervical Anesthesia in Interruption of Pregnancy.—Schneider reports from Halbau's clinic excellent results with Gellert's paracervical anesthesia. It allows a rapid, innocuous and painless instrumental dilatation of the cervix. It is especially suitable for artificial abortions. He is opposed to it in febrile abortions—partly because the cervix is usually dilated to some extent. The technic is simple. The anterior and posterior parts of the cervix are caught by a forceps and after disinfection of the vagina drawn forward and to one side. A 10 cc. syringe, filled with a 1 per cent solution of procaine hydrochloride with some epinephrine, is armed with a long needle. The latter is inserted lateral to the cervix and pushed 3 to 4 cm. upward in contact with its muscles. After tentative aspiration (to avoid the risk of intravenous injection) the fluid is deposited. The same procedure is repeated on the other side. The dilation may begin after five minutes, and is surprisingly easy.

Polycythemia Ending in Myelophthisis.—Detre's patient, suffering from polycythemia, was treated by roentgen irradiation of the spleen and bone marrow. He returned two months after this treatment with blood changes corresponding to pernicious anemia and died shortly after.

Muscle Atrophy and Endocrines.—Herzog observed considerable improvement after injection of an extract of the testis in a eunuchoid man with neural progressive dystrophy.

Standardization of Amboceptors.—Dold and Gross found that external factors cause large differences in the titer of hemolytic amboceptors. The complement strength always fluctuates during the first hours after coagulation of the blood. Shaking or blowing through the dilutions of amboceptors lowers the titer. Erythrocytes from old sheep are more resistant than those obtained from young animals. Prolonged shaking of this blood (for defibrination) lowers its resistance. This is probably due less to injury to the cells than to a more complete removal of the fibrin. Addition of fibrin lowered the titer. The highest titer was obtained when using a solution isoionic with blood for dilution of the amboceptor.

Prevention of Measles.—Rietschel points out the difficulties in obtaining convalescent serum and the danger of its contamination. He also warns against Degkwitz' alleged preventive serum from animals.

Monatsschrift für Geb. und Gynäkologie, Berlin

74: 245-318 (Sept.) 1926

*Pregnancy Toxicosis with Grave Anemia. H. Offergeld.—p. 245.
A Calculus in the Uterus. M. Esser.—p. 265.
Fetal Inclusions and Their Interrelations. M. Budde.—p. 276.
Blood Grouping Before Transfusion. W. Baer.—p. 284.

Pregnancy Toxicosis with Blood Picture of Pernicious Anemia.—Offergeld says that in this type of anemia the fetus is always free from the characteristic blood changes while with true pernicious anemia it rarely escapes. In both types a constitutional and endocrine predisposition is evident, but recovery in the pregnancy toxicosis may follow stimulation of the blood producing apparatus (organotherapy) with or without termination of the pregnancy. The main thing is to recognize the tendency early. Great weakness and the dull yellow complexion should suggest it. The pulse, blood pressure and heart action are more important in estimating the outlook than the blood picture, but the appearance of megaloblasts warns that further delay is dangerous. We have no guarantee, however, that interruption of the pregnancy will arrest the toxicosis; the favorable moment may have passed. In the two cases described, both women recovered after termination of the pregnancy, spontaneous in one case.

Wiener klinische Wochenschrift, Vienna

39: 961-984 (Aug. 19) 1926

*Blood Groups and Paternity. P. Moritsch.—p. 961.
*Action of Hypnotics. J. Méhes.—p. 962.
*Complication of Insulin Treatment. J. Güdemann.—p. 963.
Julius Kratter. F. Reuter.—p. 966.
Quinine in Pneumonia. W. Berger.—p. 969.
"Inversion of Duodenum." J. Schnitzler.—p. 972.
Reply. A. Spitzer.—p. 972.
Roentgen Study of Base of Lungs. K. Hitzenberger.—p. 977.
Tuberculosis and Pregnancy. W. Weibel. Supplement.—pp. 1-11.

Blood Groups and Paternity.—Moritsch reports a few cases where the question of paternity was solved by a lucky combination of the blood groups in the subjects concerned. Unfortunately the number of such combinations is limited. The method is of no use in cases where either parent belongs to the group IV (AB), or one parent to group II (A), the other to group III (B), or where the child belongs to the mother's group or to group I (O). Identity of blood group in alleged father and child does not prove paternity: any man of the same blood group might be responsible. Consequently men are always willing to submit to the test, since it may exonerate, but cannot incriminate them.

Action of Hypnotics.—While morphine induces sleep in rabbits only when used in large doses, and scopolamine not at all, the narcotic action of both was pronounced in decerebrate animals. Méhes concludes from such experiments that the drugs act probably on the midbrain—certainly not chiefly on the cortex, except by checking the excitement.

Complication of Insulin Treatment.—Güdemann's diabetic and tuberculous patient, kept under insulin treatment, sud-

denly showed hematuria. It improved, but reappeared after every new injection of insulin.

39: 985-1008 (Aug. 26) 1926

Biology of the Skin. M. Lévai.—p. 985.
*Acid Diet in Surgery. A. Jalcowitz and W. Schosserer.—p. 989.
*Arresting the Gastric Crisis in Tabes. O. Sperling.—p. 990.
Urology in Surgical Clinics. K. Haslinger.—p. 992.
*Quinine in Pneumonia. W. Berger.—p. 996. C'cn.
First Hundred Years of Microscopy. I. Fischer.—p. 1000.
Pelvic Changes in the Menopause. J. Novak.—p. 1003.
Arsphenamine Injuries of Nervous System. E. Pollak.—p. 1004.
Finer and More Searching Methods in the Early Diagnosis of Pulmonary Tuberculosis. W. Neumann. Supplement.—pp. 1-8.

Acid Diet in Surgery.—Jalcowitz and Schosserer administered three times daily 1 Gm. ammonium chloride in capsules as an aid in minor surgery. They report good results in open acute inflammations.

Tabes.—Sperling was able to stop gastric crises in one patient by strong pressure applied to a hyperalgesic point near the eleventh vertebra. Slight pressure increased the pain. He mentions his failure in other cases.

Quinine in Pneumonia.—Berger confirms the good results obtained in treatment of lobar pneumonia with intramuscular injections of quinine according to Aufrecht. He uses 0.5 Gm. on the first day, 0.7 or even 1 Gm. on the second day if the first injection had no effect.

Zeitschrift für klinische Medizin, Berlin

103: 579-817 (Aug. 23) 1926

Syphilis and Heart Disease. D. D. Pletnew.—p. 579.
Theory of Endocarditis. B. Jegorow.—p. 584.
Cardiovascular System in Malaria. A. S. Berland.—p. 593.
Diabetic Coma. G. Hetényi.—p. 601.
*Benzaldehyde Test with Serum. E. Adler and B. Hilgenfeldt.—p. 614.
Psychanalysis and Clinical Medicine. M. Bálint.—p. 628.
*Results of Laboratory Tests in Pernicious Anemia. I. Zadek.—p. 646.
Rest Cure and Blood Picture. B. Kaufmann.—p. 694.
Blood Bilirubin. J. Förster and B. Förstner.—p. 703.
Cisternal Injection of Pituitary Extracts. J. Jánossy.—p. 715.
*Condition at the Height of Training. H. Herxheimer.—p. 722.
*Alimentary Cholesterolemia. A. L. Mjassnikow.—p. 767.
Physiology of Old Age. M. Berliner.—p. 779.
Heart and Respiration After Running. R. Ackermann.—p. 800.

Benzaldehyde Reaction with Serum.—Adler and Hilgenfeldt studied the action of Ehrlich's benzaldehyde reagent on blood serum. A positive reaction indicates here the presence of tryptophan and is not specific for urobilinogen in the serum.

Laboratory Results in Pernicious Anemia.—Zadek publishes extensive reports on the morphology, chemistry and physical chemistry of the blood, as well as on the examination of the stomach contents, feces and urine in pernicious anemia.

Condition During Training.—Herxheimer continued his investigations on training. The alkali reserve increases. It seems that the tendency of the metabolism is to shift toward alkalosis (predominance of vagus). The speed of return to the previous level of the pulse frequency and of alveolar carbon dioxide tension after exertion is a good measure of the stage of training.

Alimentary Cholesterolemia.—Mjassnikow administered a "cholesterol breakfast" consisting of eight eggs or 2 Gm. of cholesterol to various subjects and determined the blood cholesterol at intervals. In other experiments he repeated the "cholesterol breakfast" for several days. Practically no increase in blood cholesterol was observed in healthy subjects. One administration of cholesterol did not change the blood in seven patients with liver disease. In some of these a sudden cholesterolemia set in on the fourth or fifth day of repeated ingestion of the substance. The blood cholesterol increased considerably and regularly in nephrosis and frequently in arteriosclerosis after one meal. Prolonged administration increased the cholesterolemia slowly in most of these patients.

Zentralblatt für Gynäkologie, Leipzig

50: 2289-2352 (Sept. 4) 1926

Serodiagnosis in Gynecology. Lüttge and v. Mertz.—p. 2290.
Lüttge-v. Mertz's Alcohol Extract Reaction. H. Kamniker.—p. 2301.
*Oliguria and Hyperhidrosis in Pregnancy. N. Louros.—p. 2311.
*Treatment of Postpartum Hemorrhage. Kok.—p. 2313.
*Pressure Injury from Os Uteri. E. Poeck.—p. 2316.
The Placenta After Cervical Cesarean Section. P. Klumper.—p. 2319.
*Eclampsia Late in the Puerperium. F. Iványi.—p. 2323.
Abortion in Double Pregnancy in Double Uterus. P. Garfunkel.—p. 2324.

Oliguria and Hyperhidrosis.—Louros reports a case, in which a woman, aged 25, observed a decrease of the excreted urine in the first months of pregnancy and at the same time increased sweating. When Louros saw her, in the eighth month of pregnancy, the daily amount of urine was usually 80 to 100 cc. with a fluid intake of 600 cc. Excessive sweating occurred at intervals. No preeclamptic symptoms were observed. Treatment with various diuretics was without result. A compensation in the regulation of the water metabolism seemed to have become established. Whether the oliguria depended on the hyperhidrosis or vice versa, it was not possible to decide.

Treatment of Postpartum Hemorrhage.—Kok reports a case in which a severe postpartum hemorrhage was stopped by removal of a blood coagulum from the uterus. Placental tissue was not found. Among 3,222 births during the past two years he observed four similar cases.

Injury to the Child's Skull from a Rigid Os Uteri.—Poeck reports two cases in children of primiparae, aged 26 and 28, respectively. The infants, born spontaneously after protracted labor, each presented a swelling, demarcated by a circular groove, in the parietal region. In the first case, the swelling subsided in six days; in the second, there was suppuration of the pressure ring and ten days were required for healing. At parturition, especially in primiparae, Müller's ring, which Poeck terms a "middle os uteri," may become abnormally rigid. It was this ring which caused the injury in the second case. In the first, the impression on the skull was that of the external os. Obstructive rings in the cervix are most frequent in elderly primiparae. They are due to rigid tissues rather than to spasm, though the latter may be added to the former condition. Narcotics have no effect on the primary rigidity, which must be broken down by labor unless relief is given by operative intervention, which is often indicated.

Eclampsia Occurring Late in the Puerperium.—Iványi reports a case of eclampsia fifteen days post partum. The patient recovered after venesection. He quotes eight other cases of eclampsia occurring more than fourteen days after labor.

Zentralblatt für innere Medizin, Leipzig

47: 809-824 (Aug. 21) 1926

Lymphemia Simulating Myelemia. W. O. Berghaus.—p. 809.

Profilakticheskaya Meditsina, Kharkov

5: 1-208 (June) 1926. Partial Index

Biologic Diagnosis of Botulism. M. N. Solovyeff.—p. 39.

5: 1-286 (July-Aug.) 1926. Partial Index

*Vaccine Therapy of Dysentery. Glukhoff et al.—p. 64.
Penetration of Helminths from Mother to Fetus. K. I. Skryabin.—p. 71.
Biology of Malarial Mosquito. S. G. Shtsherbakoff.—p. 77.

Oral Vaccine Treatment in Dysentery.—Glukhoff, Volkova, Erusalimchik and Panina applied vaccine in a further series of eighty-one cases of dysentery in children and adults. Dysentery was the clinical diagnosis in fifty-seven cases, hemorrhagic colitis in the others. Three children (7.7 per cent) died following vaccine treatment, while the mortality among those treated with serum was 27 per cent; among those treated otherwise, from 17 to 32 per cent. The vaccine, in the form of tablets, was prepared with Shiga's and Flexmer's bacilli; each tablet containing 100,000 millions of the bacilli. The tablets were dissolved in water or sodium chloride solution and taken on an empty stomach. In grave cases, five, even six tablets were given in a day. The treatment was continued from two to six days; in a few instances eleven days. Within the first day of the treatment the stools became less frequent and the general condition improved. By the second day the blood in the stools decreased, disappearing entirely by the seventh day in over half of the patients. Experiments on rabbits indicated local immunity of the intestine following administration of the vaccine.